RELATIONSHIP BETWEEN AWARENESS OF NUTRITION AND PRACTICE OF NUTRITION AMONG SECONDARY SCHOOL STUDENTS IN KADUNA STATE: IMPLICATIONS FOR COUNSELLING

BY

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A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES AHMADU BELLO UNIVERSITY, ZARIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER DEGREE, IN GUIDANCE AND COUNSELING

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DECLARATION

I declare that this work entitled RELATIONSHIP BETWEEN NUTRITIONAL AWARENESS AND PRACTICE AMONG SECONDARY SCHOOL STUDENTS IN KADUNA STATE was carried out by me in the Department of Educational Psychology and Counselling. The information derived for the literature has been duly acknowledged in the text list of references provided. No part of this dissertation has been previously used for another degree in any University.

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CERTIFICATION

This dissertation entitled 'RELATIONSHIP BETWEEN AWARENESS NUTRITION AND PRACTICE NUTRITION AMONG SECONDARY SCHOOL STUDENTS IN KADUNA STATE, NIGERIA'by Juliana Lamja meets the regulations governing the award of Master's Degree (M. Ed) Guidance and Counselling of Ahmadu Bello University, Zaria,and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This research is dedicated to the Almighty God whose infinite power for Grace, Wisdom, and Guidance has made the work come into existence.

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ABSTRACT

The purpose of the study was to assess the relationship between nutritional awareness and practice among secondary school students in Kaduna State. The study was guided by four objectives, four research questions and four null hypotheses these were tested at 0.05 level of significance. Correlational Design was used in this study. The Population of the study consists of 3,514 senior secondary schools in Kaduna State. A simple random sampling technique was used to select 10% of the population of the 342 respondents, 12 schools from the 4 educational zones were randomly selected. The instrument used for data collection is a structured questionnaire called Students Questionnaire on Nutritional Awareness and Practice, (SQNAP) developed by the researcher and it consists of two sections, section A requests for the demographic information of the respondents while section B consists of 18 questions Nutritional Awareness and 12 questions on Practices. Descriptive statistics of frequency counts simple percentage mean and standard deviation were used to analyze the research questions. Null hypotheses one, two and three were tested with Pearson Product Moment Correlation, while null hypotheses four was tested using Analysis of Variance (ANOVA). All hypotheses were tested at 0.05 alpha level of significance. The Results of the analysis reveal that significant relationship exist between nutritional awareness and practice among secondary school students in Kaduna State. There is no significant relationship between nutritional awareness and practice of nutrition of male students. There is no significant relationship between nutritional awareness and practice of nutrition among female students' secondary school in Kaduna State. There is no significant relationship among age group on nutritional awareness. Significant relationship exists among age groups in nutritional practices in Kaduna State. This shows that the older the students' age group, the higher nutritional practices. It was recommended that when counsellors are to give counselling on nutrition and practice to students there should be no gender discrimination. It was also recommended that the government, NGO and counsellors should try to carry the rural students along in the awareness of nutrition. Proper nutrition regardless of age the nutritional counselling intervention programmes should cover all groups of human being and locations.

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ABBREVIATIONS

WHO: World Health Organization

WFP: World Food Programme

FAO: Food and Agriculture Organization

NGO: Non-Governmental Organization

USDA: United States Development of Agriculture

OECD: Organization for Economic Co-operation and Development

C CRC: Committee on the Convention of the Right of the Child

OPERATIONAL DEFINITION OF TERMS

The following definitions are presented to enhance effective communication.

Nutrition: Nutrition is the process of intake of nutrients and its utilization by an organism.

Nutritional Awareness: Having awareness that a particular food exist and that it is important to healthy living.

Practice: To do something regularly as part of your normal behaviour.(Nutritional practices eating nutritious food most of the time).

Healthy eating: Eating a variety of food from the food groups to feel good and healthy.

Health: Health is a state of complete physical, mental brain and social well being and not merely the absence of disease or infirmity.(WHO 1999)

Rural: Is less populated area or out sketch of a city

Urban: Town or a City more populated than rural

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The need for nutritional awareness and practices for the health of the students in Nigerian secondary schools cannot be over-emphasized. There have been considerable changes in human lifestyle all over the world in the recent decades, especially in recent years. The lifestyle of man has rapidly changed, and these changes appeared in diet or types of food, cooking time and methods Amamoto, Dozono and Adoyama (2004). According to Sampfer. Huf. And Mansen (2000) processed foods are gradually replacing non –processed ones, which is not healthy enough for the growing student health. Awareness of nutrition and nutritional practices is one of the most important aspects of lifestyle. Olumakaiye (2013), states that many male and female students in developing countries like Nigeria enter adolescence undernourished or obese, making them more vulnerable to disease and early death. Undernourishment may lead to poor academic performance among secondary school students. Amamoto etal (2004), states that epidemiological evidence shows that there is an increase incidence of diseases such as (Cardiovascular diseases, obesity, high blood pressure and cancer) which can be attributed to changes in lifestyle as well as changes in nutritional habits.

Nutritional education is also one of the important aspects that plays vital role in nutritional awareness and ultimately the health of the society. Timm, and Willett (2005) says in order to remain healthy and physically active and enjoy a healthier life style, it is necessary to obtain good nutrition awareness and practice it. The relationship between nutrition awareness and practice must be considered in order to promote the health of the students. The right of all young school children to health and nutritional

awareness are enshrined in international legal instruments. In 2003, the committee on the convention of the Rights of the child (CCRC) issued a general comment and one of the comments is that special health and development needs (food), are the rights of the adolescents and young people and they should therefore enjoy highest attainable standard of health to develop in a well balanced manner. Undernutrition may reduce the mental alertness of the students which later can result to poor academic performance, with CCRC comment; students should have high level of awareness of nutrition which subsequently may lead to more food-conscious society and healthier students in Kaduna state.

Awareness and Practice of nutrition can play an important role in promoting lifelong healthy eating because dietary factors contribute substantially to the burden of preventable illness and premature death. USDA encourage schools to provide nutrition education from preschools and that nutrition education may be educational component of all child nutrition programs and that it should be offered in all schools, because diet influences the potential for learning as well as health, the USDA also made a statement that an objective of the first national education goals is that children "receive the nutrition and health care needed to arrive at school with healthy minds and bodies". With this, students are more likely to learn and change positively when community can engage their resources and services to respond to the nutritional needs of the students.

Awareness about healthy food choice and food safety can be a predisposing factor for improving eating habits and adopting healthy diet. Gates and De Lucia(1998),are of the opinion that it is not easy to motivate healthy eating without awareness. Nutritional practices refer to food consumption habit, choice, selection or the adopted pattern of eating by different groups of people, Flynn, Neil, Maloff, Mutasingwa and Flord 2006). Factors influencing eating behaviour need to be better understood to develop effective

nutrition intervention; this should be tailored towards individuals to improve their healthy eating habits Zaho and Zahi, (2001). In the magazine of Flag of the Benue State Maternal New Born and Child Health week program, it was stated that Nigeria is the second highest in the world after Indian that has been attributed to have higher level of under nutrition among children, Ejembi (2014), no fewer than 12 million Nigerian children suffer stunted growth due to poor feeding practices and diseases. With Ejembi's statement therefore, it can be concluded that nutrition awareness and practice programme for healthy eating among the students in Kaduna state, as well as getting in touch with their parents is needed. Thus, the more awareness and practice of nutrition among students the more educational alertness the students become.

1.2 Statement of the Problem

By incorporating nutrition into the secondary school educational level traditionally creates awareness as a means of reducing illness, although nutrition problems come as result of students eating habits Devaney (2009), because they enjoyed the sweetness of the food and perhaps forgetting the hazards in eating too much of some of the sugary food and also some habits like eating and drinking water at the same time, now lead to serious complications such as gastrointestinal problem, indigestion, deficiency of some nutrients may result to stunted or defective bone growth, iron deficiency which can result to anaemic or blood disorder that can cause fatigued, weakness and more others.

Students tend to practice wrong eating habits such as fast foods dosed with sugar, thus making greater number of young people suffer from illnesses which hinder their ability to grow and develop full potentials. The World Health Organization (WHO 2000) estimated that, by 2020 non-communicable diseases will be the cause of nearly three-quarters of total death in the developed world. In addition to World Health

Organization; lack of nutrients in food causes weight loss, cognitive problems such as short- term memory loss, nerve and muscle damage. Currently, one major cause of non-communicable diseases is practicing unhealthy diet which may result to overweight and underweight. This could be the central health problem in this 21st century. With nutritional awareness, students in Nigeria are expected to maintainin health and avoid different diseases especially chronic illnesses such as heart diseases, cancer, and loss of sight, poor wound healing and poor memory. Daily practice of eating good food can help meet with physical, psychological and sociological demands to cope with life challenges.

The problem of hunger and poverty among the developing countries has been a matter of global concern. Many children die before school age those that survive suffer from severe hunger, malnutrition and diseases which affect their learning abilities in school, (WFP,1996). According to the Food and Agriculture Organization FAO, (1998) estimation, 300 million children in developing countries were chronically hungry, without proper breakfast, students are mostly distracted in the classroom and hardly stay alert and concentrate during lesson. This may likely be the reason why most students in Kaduna State public schools hardly stay in classroom till closing time and absent themselves from school within the week. Ekeh (1996). Ekpenyoung (1998) states that students in secondary schools neither possess adequate knowledge of nutritional values nor practice good nutritional behaviour as a result of which students manifest poor health development and poor eye sight.

Awareness of nutrition and practice can assist students to understand the significant benefit in nutrition, and that eating a healthy diet is associated with improved cognitive function (especially memory), this also may reduce absenteeism and improve mood, Holyland, Dye Lawton (2009). One of the problems students in

Kaduna state may likely encounter also could be inability to read the food labels to know the nutrient content. For this, an investigation into the Nutritional awareness and practice among students of secondary schools in Kaduna State is required. This study therefore seeks to find out the relationship between nutritional awareness and practice in Kaduna State.

1.3 Objectives of the Study

This study has the following objectives to:

1. To determine the relationship between awareness of nutrition and practice of nutrition among secondary school students in Kaduna State;
2. To assess the relationship between awareness of nutrition and practice of nutrition among male students' eating habits of secondary school in Kaduna State;
3. To assess the relationship between awareness of nutrition and practice of nutrition among female students' eating habits of secondary school in Kaduna State.
4. To determine the relationship between awareness of nutrition and practice of nutrition among rural secondary school students in Kaduna State based on Location;
5. To determine the relationship between awareness of nutrition and practice of nutrition among urban secondary school students in Kaduna State.
6. To assess the relationship between awareness of nutrition among age groups of secondary school students in Kaduna State.
7. To assess the relationship between practice of nutrition among different age groups of students of secondary school in Kaduna State.

1.4 Research Questions

The following research questions serve as guide to this study:

1. What is the relationship between awareness of nutrition and practice of nutrition among secondary school students in Kaduna State?
2. What is the relationship between awareness of nutrition and the practice of nutrition among male students' eating habits at secondary school in Kaduna State?
3. What is the relationship between awareness of nutrition and practices of nutrition among female students' eating habits at secondary school in Kaduna State?
4. What is the relationship between awareness of nutrition and practice of nutrition among rural secondary school students in Kaduna State?
5. What is the relationship between awareness of nutrition and practices of nutrition among urban secondary school students in Kaduna State?
6. What is the relationship between awareness of nutrition among age groups of secondary school students? In Kaduna State?
7. What is the relationship between practices of nutrition among age groups of secondary school students in Kaduna State?

1.5 Research Hypotheses

The following are the research hypotheses for testing at < 0.05:

HO_1: There is no significant relationship between awareness of nutrition and practice of nutrition among secondary school students in Kaduna State.

HO_2: There is no significant relationship between awareness of nutrition and the practice of nutrition among male students eating habits secondary school in Kaduna State.

HO_3 There is no significant relationship between awareness of nutrition and the practice of nutrition among female students eating habits secondary school in Kaduna State.

HO_4: There is no significant relationship between awareness of nutrition and practice of nutrition among rural secondary school students in Kaduna State.

HO_5 There is no significant relationship between awareness of nutrition and practice of nutrition among urban secondary school students in Kaduna State.

HO_6 There is no significant relationship between awareness of nutrition among age groups of secondary school students in Kaduna State

HO_7 There is no significant relationship between practice sof nutrition among age groups of secondary school students in Kaduna State.

1.6 Basic Assumptions

For the purpose of this study, the following assumptions are made:

1. Awareness of nutrition and practice of nutrition can bring about desired change in healthy lifestyle among secondary school students in Kaduna State.
2. The level at which awareness of nutrition and practice of nutrition influence male students' eating habits may differ depending on the students' exposure in the school or at home.
3. The level at which awareness of nutrition and practice of nutrition influence female students' eating habits may differ depending on the students' exposure in the school or at home
4 The influence of awareness of nutrition and practice of nutrition may differ among rural secondary school students in Kaduna State.
5 The influence of awareness of nutrition and practice of nutrition may differ among urban secondary school students in Kaduna State.

6 The age of the students in Kaduna state secondary school may have influence on their awareness.

7 The age of the students in Kaduna state secondary school may have influence on their practices.

1.7 Significance of the Study

The findings of the study would be of great significance to:

Counsellors, Students, Dieticians, Curriculum planners, Parents, Communities, Health service workers and Non- Governmental Organization (NGOs). It is hoped that the findings of the study would benefit Counsellors to assist the students early on the types of food they should feed on so as to boost their mental health, physical, psychological and sociological well being. Dieticians will benefit, in the sense that safe food and adequate nutrition are important to Nigerians, the result of the study will help dieticians to enlighten students on the types of food to feed on in order to boost their immune system or to reduce fats from the body.

The students would also appreciate the fact that eating proper nutrition promotes optimal growth and development of children and that healthy eating helps prevent sicknesses. Curriculum planners would find relevant and useful information to teachers to incorporate nutritional knowledge in the lesson time table in order to educate students early enough so that they have future healthy lifestyle.

It is also expected that the findings of the study would create awareness for parents on how to practice or portray healthy eating patterns for their children that is, what to eat and at what time they should eat and to also know the combination of the food students should eat or dwell on in order to have a well-developed reproductive organ. With the awareness of nutrition and practice of nutrition, parents can also help prevent students from becoming obese or anaemic.

Furthermore, the study would be of significant help to the community and NGOs as the awareness will help them synthesize the kind of food allowed in the society and as well as getting in touch with the producers of the food in Kaduna state. It would serve as a guide to the health personnel during health talk or giving health education to the public. Hopefully, the study would provide first-hand information to professionals and other allied personnel such as psychologists, prison workers, police and judges to be aware of those foods that are good for the body. For further research, other researchers should find out the quantity of elements content in food to be taken per meal.

1.8 Scope and Delimitation of the Study

The study would cover selected public secondary schools in Giwa, Anchau, Lere, Godo—Godo, Zonkwa, would be used to cover all the rural areas. While the Urban area would be Sabo-Tasha, Birnin-Gwari, Zaria, Riga-Chukun, Kafanchan and Kachia. The study will also cover students within the age range of 12- 18 years. The private schools will not be involved and those above 18 years will not be included in this study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

In this chapter, review was done under the following; concept of nutrition, concept of nutritional value, classes of nutrition, nutrients and sources, effect of awareness of nutrition on secondary school students, importance of nutrition requirement, the determinant of health, planning diet for the teenage students, food eating habit, nutrition counselling, theoretical framework, empirical study and the summary.

2.2 Conceptual frame work

The conceptual framework of this study includes the following;

2.2.1 Concept of Nutrition

Nutrition is the food you eat and how the body uses it to grow, to keep healthy and to live. It is relatively a new science which evolved from chemistry and physiology, in other words, nutrition is defined as food at work in the body (Leven, 1976). In a broader sense, nutrition is defined as "the science of foods, nutrients and other substances with their action, interaction, and balance in relationship to health and diseases", United States Development of Agriculture (2000), USDA. Nutrition is the process by which the organism ingests, digests, absorbs, transport and utilizes nutrients and disposes off their end products. In addition, nutrition is concerned with the social, economic, cultural and psychological implication of food and eating habits.

Nutritional status is defined as the extent to which a customary diet meets the body's requirement. In other words, it signifies the condition of body after the consumption of food, and the condition of the health of individuals as influenced by the

utilization of nutrients. This can be assessed by dietary survey, anthropometry, clinical and laboratory investigations. A brief outline of the dietary information on the importance of various nutritional constituents that are present in foodstuffs is given in the following pages. Nutrient is a substance that is needed to keep a living thing alive and to help it grow, Oxford Dictionary (2000). Nutrient is defined as the constituents of food, which perform important functions in our body. Nutrients are the constituents in food that must be supplied to the body in suitable amounts. These include proteins, fats, carbohydrates, minerals, water and vitamins. Nutrients supposed to be present in all the food we eat. If these nutrients are not present in our food in sufficient amount, the result is ill health. Important nutrients include carbohydrates, proteins lipids, vitamins, minerals, and water. Food also contains many substances which are non–nutrients e.g. colouring and flavouring substances in food.

A healthy diet is eating the right amount of food, which gives your body the nutrition it needs to function properly. A correct diet means getting the right types of food and adequate amount of foods and drinks to supply the nutrients and energy for maintaining body cells, tissues and organs, and for supporting normal growth and development. A correct diet provides enough energy and nutrition for optimal growth and development. Jeanne (2015) When all essential nutrients are present in correct amount and proportion as required by our body, it is called optimum nutrition or adequate nutrition. Avioli (1985) affirms that(malnutrition is an impairment of health either from a deficiency or excess or imbalance of nutrients. In other words, malnutrition refers to both under nutrition and over nutrition, under nutrition means a deficiency or lack of one or more nutrients. For example, vitamin A deficiency and PEM (Protein Energy Malnutrition) are common problems in India Richard(2009).

Over nutrition means excess of one or more nutrients, for example overweight or obesity occurs when an individual takes more energy than he is able to utilise.

According to Robin (2011), the relationship of food to health has been made from the research conducted by chemists, microbiologists, pathologists, and nutritionist over the past two centuries. Human nutrition is governed by many factors like food habits and behaviour, food beliefs, ethnic influences, geographic influences, religious and sociological factors, psychological factors, food and production, income, national and international food policies, food technology, processing, fisheries, transportation, marketing, educational status and other mass media facilities. Health is a common theme in most cultures; in fact, all communities have their concepts of health. Traditionally, health is conceived as "absence of disease". At the individual level, it cannot be said that health occupies an important place. It is usually subjugated to other needs defined as more important e.g. wealth, power, prestige, knowledge, security etc. Health is often taken forgranted and its value is not fully understood unless it is lost.

2.2.2 Concept of Nutritional Value

Nutritional value of food refers to the quantity of nutrients found in the food items, according to the health-food-site .com. the nutritional value of food also refers to its capacity to nourish the body with the substances needed to live and grow. The body relies on food for fuel and to obtain the chemical compounds it needs to function. The greater the variety of nutrient the food contains, the greater the value of the food. Gopalan, Sastri, Balasu and Bramanian(2000).

The first five nutrients are considered macronutrients, which are the nutrients the body requires in relatively large quantities. The last two nutrients vitamins and minerals are considered micronutrients, which the body only needs in relatively small amounts, waldenuniversity.com/health degrees.

1 The Value of Macronutrients

The body primarily uses carbohydrates and fats as fuel to supply the body with the energy, or calories, it needs for activity. A "good fats" also play a role in promoting healthy cholesterol levels,they assist in the regulation of some hormones and actually comprises of 60 percent of your brain tissue. Protein is important because they are the bodies' only source of essential amino acids. Amino acids are the building blocks of life; they are vital to nearly every function of the body. Fibre is a significant part of the diet because it helps to facilitate digestion and works to maintain good cholesterol. Water is fundamental to all life; the human body is 60 percent to 70 percent water.

2 The Value of Micronutrients

The chemical compounds of vitamins and minerals contribute greatly to the formation, growth, regulation, protection, repair and conversion activities which the body must carry out to maintain health. There are many different classes of vitamins and minerals, each performing a unique function in sustaining or restoring the body. If the body is deficient in any of the micronutrient, it would result in health complications. With this, counsellors have it as a duty to create this awareness among students.

3 Nutrients Density

Nutritional value can be measured in terms of food's nutrients density. A food's nutrient density corresponds to the amount of nutrients in a food in relationship to how many calories it contains. It's basically a calculation of cost versus benefits, the 'cost' being the calories and the benefits being the sustenance the food offers in other nutrients. Foods that are relatively low in calories but rich in any combination of micronutrients, fibre, essential amino acids and polyunsaturated fats are considered nutrients dense and of great nutritional value.

3 Brain Boosting

Without the proper development of the brain and good health, a child will not be able to perform well academically. According to Peace Anyanwu (Anyanwu53@yahoo.com) Child's academic prowess depends on eating, whole grains, milk, oily fish, vegetables, beans, nuts, berries, chocolates, and yoghurt. She further emphasized on these foods and their values

i) **Whole grains:** whole grains are high in fibre and slow to digest. This helps to keep blood sugar steady. It is especially important for teenagers who are trying to be attentive in class, during that hunger pain and pre-lunch period. Whole grains include oats, rice etc. a bowl of sugary cereal is not healthy breakfast, but many other breakfast cereals can be a healthy part of their diet. Simply feed them with whole grain cereals that is calcium fortified and with added fiber.

ii) **Milk:** Many adolescents are beginning to drink less of milk. This isn't because they develop distaste for milk, but because so many other drinks, including soda, fruit juice, and too much artificial fruit juices are available at home. Milk is a good source of calcium, vitamin D and protein, so teens should be part of every healthy diet.

iii) **Oily Fish:** Essential fats cannot be produced by the body, and must be obtained through diet. The most effective is omega-3 fats which occur naturally in oily fish. Other good sources include soya beans oil, pumpkin seeds, walnut oil and soya beans. They are food for the brain, the heart, joints and general wellbeing

iv) **Vegetables:** Vegetables are on the list of the best food for adolescents, but that doesn't mean tricking your teens into eating them or trying to force them to eat pumpkin and spinach. There are plenty of vegetables that the teen like, and they include cooked carrots, peas, and baked potatoes. You must be sure you add

vegetables when you serve them salad for dinner and also avocado. These contribute to healthy blood flow. Healthy blood flow means a healthy brain.

v) **Beans:** Beans provide additional energy from protein and complex carbohydrate in addition to fibre, vitamins and minerals. Beans are excellent brain food.

vi) **Berries:** Strawberries and cherries all contain powerful antioxidants. The richer the colour intensity, the more nutritious are berries. They are rich in vitamin C which is thought to prevent cancer. Students that consume berries regularly have improved memory. The seeds also contain omega three fatty acids. Other essentials include tomatoes, eggs, and of course fruits.

vii) **Yoghurt:** Yoghurt is a healthy food for students especially for younger ones who don't drink a lot of milk. Yoghurt is a good source of calcium, when choosing yoghurt for your children, look for one with "live active culture" that is low fat and without a lot of added sugar. Calcium rich foods such as yoghurt improve nerve function. Yoghurt contains amino acid which aids memory function and increases alertness. Double-up on your brainy snacks by using fresh berries on their yoghurt.

Most of the time parents make their children to be more well rested, driving to their tutors and forcing them to get their homework done before their dinner. May be this is some of their best strategies for raising their children, but you might also be surprised to know that the kitchen is another place you can improve your child's academic ability.

2.3 Nutrients and their Sources

Good awareness and practice of Nutrition is a basic component of health. It is of prime importance in the attainment of normal growth and development and in the

maintenance of health throughout life. The discovery of vitamins at the turn of the past century has "rediscovered" the science of nutrition. Since then, great advances have been made in the field of nutrition, between the two world wars; research was mainly centred on vitamins. After the Second World War, research on protein gained momentum. According to Kate (2012), during the seventies, a great deal of interest had been focused on the role of dietary fats in the pathogenesis of athrosclerosis and its complications, particularly coronary artery disease. In the last decades, nutritional knowledge has played the roles of tracing elements and dietary fibre in human health, this has attracted considerable attention, since all foods are not of the same quality from the nutritional point of view, man's ability to meet his balanced nutrition needs and maintain good health depends upon the type and quantity of foodstuffs he is able to include in his diet, with the help of nutritional information personnel.

Food: The edible stuff that provides nutrients is termed as food. Food is broadly classified as cereals, pulses, vegetables, fruits, milk, eggs, flesh foods, fats and sugars. According to Allen (1982), nutrient classes can be categorized as either Macro nutrient (need relatively large amount) or Micro nutrient (need in smaller quantities) the macro nutrients are carbohydrate, protein, fat,fibres and water. Micro nutrients are vitamins and minerals.

1. Carbohydrates

They are simple sugars or substances, which can be reduced to simple sugars by hydrolysis. They are composed of carbon, hydrogen, and oxygen, the last two being in the proportion to form water hence termed as "Carbohydrate". The general formula is Cn $H_{2n}O_n$.Carbohydrate is widely distributed in nature in the form of sugars, starches, celluloses and other substances. By swaminathan (2014).

Carbohydrates are classified as monosacharides, disaccharides and polysaccharides. The term “Saccharide” meaning sugar or sweetnes, is related to the characteristic taste of many of the simple carbohydrates. Carbohydrates were first named according to the sources from which they were obtained e.g. grape, sugar, cane sugar, malt sugar, milk sugar, etc. Then they were named from a prefix related to the sources followed by the suffix “ose”. eg. Fructose (fruit sugar), Lactose (milk sugar), these names are still used.

Source

There are three main sources of carbohydrates such as Starches, Sugars and Cellulose.

i. Starches are present in cereals (eg. Rice, wheat, maize, sago, and all bakery products, pulses, potatoes, sweet potatoes, yam and dry fruits).

ii. Sugars are present in cane sugar, jiggery, honey, jam, jellies, dry fruits, sweets and fresh fruits, e.g. Banana, sapota, grapes, mango.

iii. Cellulose is the fibrous substance e.g. whole grains, whole pulses. Carbohydrates is the main sources of energy and it help to boost the glucose in the brain. Deficiency of carbohydrates are fatigue, reduces stamina, loss of muscular tissue and headaches etc.

2. Proteins

The word protein means a compound that is made up of amino acid. In 1938, a Dutch Chemist Mulder, asserts that all living plants and animals contain certain substance without which life was not possible and this was identified as proteins, in the constitution of the body, they stand next to water. Indeed proteins are of the greatest importance in human nutrition. They are complex organic compounds containing the carbon, hydrogen, oxygen, nitrogen, and usually sulphur. Some proteins also contain phosphorus, iron, iodine, copper and other inorganic elements. The proteins differ from

carbohydrates and fat as they contain nitrogen. Proteins are made up of much smaller units known as amino acids.

Food Sources

There are two main dietary sources of proteins:

i Animal source: Milk and milk products excluding butter and ghee, eggs, meat, fish and poultry.

ii. Plant sources: Pulses e.g. Soyabean, Bengal gram, red gramdal, green gram, black gramdal; Cereals e.g. wheat maize, rice, barley, jowarbajra; and nuts e.g. peanuts, almond, cashew nuts. Fruits and vegetables are poor sources. Wallach (1988). Protein build and repair body tissues, hair and fingernails, proteins also fight infection and carry oxygen from the lungs to other parts of the body. Mohmood (2014) state that Proteins deficiency can result to weight loss, dehydration, kwashiorkor, liver damage and poor immunity.

3. Fibre

Sources of fibre are: kidney beans, chick peas, fresh foods and vegetables fiber foods help in digestion and lowers cholesterol. Jeanne (2015)

4. Lipids or Fats

According to Mohmood (2014), fat is an important component of our diets and serves a number of functions. Fats are also organic compound of carbon, hydrogen and oxygen. These differ from carbohydrates in that they have much smaller proportion of oxygen and much greater proportion of carbon and oxygen. Lipids are broadly classified into two groups; simple lipids and Compound lipids.

Simple lipids include fatty acids and waxes. All other lipids are included under compound lipids eg, carotenieds and phosphoglycerides. He further observes that the term `fat' is generally applied to all triglycerides regardless of whether they are solid or

liquid at room temperature. Triglycerides from animal sources contain a higher percentage of saturated fatty acids and are normally solids at room temperature and known as fats. The plant triglycerides are rich in unsaturated fatty acids and are generally liquids at room temperature and called oils. Fats in the diets can be of two kinds, the visible and invisible fat. The visible fats are those which are derived from animal fats like butter, cheese and those derived from vegetables sources like mustard oil, groundnut oil, sunflower oil etc. Apart from the added visible fat, some amount of fat is present in other foods like cereals, pulses, oilseeds, milks, eggs & meats. The invisible fat is believed to contribute significantly to the total fat and essential fatty acid content of the diet depending upon the foodstuffs present in the diet.

Food Sources

Dietary fats are derived from two main sources

i Animal Sources: It includes butter, cheese, curd, whole milk, and its products meat, fish, poultry, and eggs.

ii. Plant Sources: They include all vegetables oils e.g. groundnut, gingerly, mustard, cottonseed, sunflower, and coconut oil. Also, it will include hydrogenated fats, margarine, nuts and oil seeds like cashew nut, peanuts, almonds, and mustard seeds. According mohmood (2014) fats are also sources of energy and omega-3, they are protective food, help blood to clot and help keep the body warm. Deficiency of Fat, dryness of skin, hair loss and poor wound healing.

4. Vitamins

Vitamins are organic compounds which are needed in small quantities to sustain life. Bendal (2013), states that the term ‘vitamin’ is derived from the word ‘vital amine’ which means essential nitrogenous compounds. The term was coined by a Polish Scientist, Funk who gave the name ‘vitamin’ to anti-beriberi substance. Later on ‘e’

was dropped and thus the term ‘vitamin’ was coined. However, with the discovery of more vitamins, it was soon realized that all the vitamins are not nitrogenous compounds; but all vitamins are essential for health. Vitamins are complex chemical substances, required by the body in very small amounts. They do not yield energy but act as catalyst in various body processes. Since vitamins cannot be manufactured in the body (at least in sufficient amounts), they have to be supplied through diet. Vitamins are broadly divided into two grounds.

i Fat soluble vitamins e.g. Vitamins A, D, E and K

ii. Water soluble vitamins e.g. Vitamins of B Group and Vitamins C.

Vitamin A

Food Sources

Only animal foods contain vitamin A as such; fish-liver oil being the outstanding. Milk, butter, whole milk cheese, liver and egg-yolk contain good quantities of vitamin A. Vitamin A is not present in plant foods, but its precursor, carotene is present which is converted into vitamin A in the body. Carotene is present in plants with green and yellow colourings. According to Kate (2012), there is a direct correlation between the greenness of a leaf and its carotene content. Grseen leafy vegetable: spinach, turnip tops, beet greens, coriander leaves, curries leaves. Yellow vegetables: Carrot, sweet potatoes, pumpkin, Yellow fruit: Papaya, mango, apricots, peaches. The deficiency of vitamin A can result to night blindness; night blindness is the inability to see in dim light.

Vitamin D

Food Sources

Vitamin D occurs only in foods of animal origin. Fish liver oils are the richest natural source. Liver, eggs and butter contain useful amount**.** Small amounts are present

in fresh milk, and milk products. Another cheap source of vitamin D is sunlight. Exposure to ultraviolet rays of the sunlight converts the precursor of vitamin D (7-dehydrocholestrol) present in the skin, to its active form. Vitamins National Library of Medicine (2014). Okonofua (1991) state that the deficiency of vitamin D results to the disease called rickets, which causes muscles and bones to become soft which can bring permanent deformity in children.

Vitamin E

Food Sources

Okonofua (1991), many vegetables oils such as wheat germ oil and cotton seed oil are good sources of vitamin E. Good concentration of vitamin E is present in dark-green leafy vegetables, nuts, legumes, as well as whole-grain cereals. Although, foods of animal origin are low in vitamin E, liver, heart, kidney, milk and eggs are the animal sources of this vitamin. Human milk provides adequate amount of vitamin E to infants; cow milk is low in this vitamin,

Vitamin K

Food Sources

The variation K mainly occurs in plants. Green leaves of plants such as spinach, cabbage, cauliflower are excellent sources. Cereals, fruits and other vegetables are poor sources. Among animal foods, pork liver is a good source. The deficiency results to blood unable to clot.

Vitamin B1

Food Sources

Ladijan (1975) says that all the natural foods contain thiamine (one of the constituents of vitamin B complex found in meat, yeast etc.) even if in very small amounts. Important sources are dried yeast, wholegrain rice and pulses, oilseeds and nuts especially groundnuts, Meat, fish eggs, vegetables and fruits are relatively poor sources. The deficiency of vitamin B1 causes beriberi, and beriberi disease symptoms include weight loss, body weakness, pain, brain damage, irregular heart rate, heart failure, and death.

Vitamin B2

Food Sources

The richest source is dried yeast. Among the good sources are milk, liver, meat eggs, kidney and growing leafy vegetables mushroom. Cereals and fruits are not rich sources, but due to the large quantity consumed, they supply much of the vitamins in the Indian diets. The deficiency causes Ariboflavinosis, this come as a result of malnutrition and causes distinctive bright pink tongue, cracked lips, throat swelling blood short eyes and low red blood cell which can result to coma.

Vitamin B6

Food Sources

Foods rich in pyridoxine are meat, poultry and fish, Potatoes, sweet potatoes are fair sources. Whole grain cereals are also good sources.

Folic Acid Group

Food Sources

It is present in the free form and in the conjugated form. Liver kidney, deep green leafy vegetables are good sources of this vitamin. Wheat, cereals provide a fair

amount. Vegetables, dairy-foods, pork and light green vegetables are poor sources. The deficiency of folic acid is Anaemia.Ladijan(1975).

Vitamin B12

Food Sources

It is present only in the foods of animal origin. Liver, meat, eggs and milk are good sources. It is not found in the food of vegetable origin. The deficiency of vitamin B12 causes a disease known as hypocobalaminemia, which causes gradual deterioration of the spinal cord and very gradual brain damage which begins as fatigue, irritability, depression or bad memory as the disease progresses.

Vitamin C

Food Sources

Fruits and vegetables are the main sources of this vitamin. Citrus fruits (oranges, grapes, fruits, lemons and limes) berries, melons, pine-apples, guavas, pears, banana, apple, leafy vegetables, green pepper and tomatoes are good source of ascorbic acid. Dry legumes contain negligible amount which increase approximately seven times, during germination. Milk, eggs, meat and poultry do not have any Vitamin C. Human milk contains four to six times as much ascorbic acid as cow's milk to protect the infant from scurry. The deficiency of vitamin C causes the disease known as scurvy. Scurvy disease causes skin spot, bleeding gums, loss of teeth, fever and death.

5. Mineral Elements

Available evidence indicates that mineral elements are essential to life Underwood(1977); Shills(1994) say that minerals are classified into 'macro' and 'micro' elements, to distinguish the mineral element required in large or minute quantities. The macro elements include calcium, magnesium and phosphorus while 'micro' minerals include copper, chromium, iron, iodine, manganese, potassium, and

zinc. Many of these elements are present in such minute amounts that they are referred to as a trace elements or micronutrients.

Calcium

Food Sources

Allen (1982) reports that milk products are excellent sources of calcium. Certain green leafy vegetables; such as mustard green, turnip greens, mint, spinach, and carrot leaves rank next to dairy products in their calcium content. Citrus fruits, legumes, meats grains and nuts provide the least calcium. Calcium is important for building strong bones, the muscles and nerves work. The deficiency results to weakness of bones and teeth, tingling in the fingers, fatigue and irregular heartbeat.

Phosphorus

Food Sources

Avoili (1985) indicates that Phosphorus is widely distributed in foods; the milk and meat groups being important contributors. Whole grain cereals and flours contain much more phosphorus than refined cereals and flours. Vegetables and fruits contain only small amount of phosphorus.

Magnesium

Food Sources

Wallach (1988) reveals that Dairy products excluding butter provide enough magnesium. Flour and cereals products, dry beans soybeans, peas and nuts are good sources of magnesium. Green leafy vegetables are excellent sources because magnesium is a part of chlorophyll. The deficiency can make the body unable to control blood glucose level, blood pressure, improper functioning of muscles and nerves.

Potassium

Food Sources

According to Ladijan (2005), it is widely distributed in foods. Meat, poultry and fish are good sources. Fruits, vegetables and whole grain cereals are especially high in potassium. Banana, potatoes, tomatoes, carrots orange juice, grapefruit juice are rich sources. The deficiency results to cramping, weakness and constipation, bloating or abdominal pain and severe irregular heart rhythms.

Sodium

Food Sources

Underwood (1977) explains that Common salt or sodium chloride is the chief source of sodium in the diet. One tea spoon of salt provides almost 2000mg sodium. It is universally used to flavour the food we eat and is also used for preserving food for long periods. Numerous sodium compounds are used in food processing and preparation; baking soda, baking powder, sodium alginate, sodium propionate, sodium citrate.

Sodium is a naturally occurring constituent in animal food which includes milk, egg, meat poultry and fish and in certain vegetables as spinach, celery, beet greens and fenugreek. Most vegetables, fruit, cereals, legumes are naturally low in sodium. Salt is an essential part of fluid such as blood.

Iron

Food Sources

Lieberman and Bruning (1994) explain that Lean meats, deep green leafy vegetables and whole-grain cereals are good sources. Egg, yolk and red meats are also among good sources. Liver is an excellent source of iron. Other vegetable and fruits are fair sources. Milk, cheese and ice-ream are poor sources. Jagger contains a good

amount of iron. This helps to build up the white blood cells, deficiency results to weakness and tiredness, performing poorly at work and school, slow social and cognitive development in children.

Copper

Davis & Mertz (1987), state that the source of copper is sea food and legumes.

Iodine

Food Sources

Grillooly (1983) give the food sources of iodine fluorine and zinc**.** Iodine is supplied by food and water; the variations are wide depending upon the iodine content of the soils from which they come. People living in coastal areas and eating locally grown foods ingests enough iodine for their use. In hilly areas where there is a deficiency of iodine in food and drinking water – Iodinization of the salt is the only technique available to make good this deficiency in order to prevent goiter.

Fluorine

Food Sources

The main source is drinking water. It occurs in traces of many foods and in good amounts in shell fish, cheese.

Zinc

It is found in traces in all body tissues and the body's content of zinc is 2 to 3 gm. It is a constituent of insulin and of many enzymes in the body. Zinc deficiency has been reported to result in growth failure and sexual infantilism in adolescents and in loss of taste and delayed wound healing, loss of hair, impotency and diarrhoea. Zinc is widely distributed in food stuffs both animal and vegetable – but the bioavailability of zinc vegetable foods is low. Animal foods such as red meat, milk and fish are dependable sources. Ladijan (1975), Suggested daily intake for adult's ranges from 5 to

10 mg, growing children, pregnant and lactating woman need more. Most human diets provide these amounts.

6. Water

Food Sources

To meet the body's needs, water is supplied by the ingestion of water and beverages, the preformed water in foods such as fruits. Deficiency results to dehydration and constipation.

2.4 Importance of Nutrition among students

Furthermore, the nature of food produced, processed, and distributed is changing rapidly owing to the scientific revolution in agriculture and technology. If these changes must produce good results, sound awareness of the principles of nutrition is required. Burma (1991) notes that students like everyone else need sound and practical knowledge that can direct their food choices to ensure sound nutrition. This implies that knowledge acquired through nutrition education should help children especially secondary school students to examine their food intake and establish judicious eating habits, because it is their growing period and this stage of rapid growth covers almost a span of ten years. Individual variation is also great in this group.

A number of physical changes and mental changes occur in this period of life. Girls mature between 11-14 years of age and boys between 13-16 years' puberty stage. The pattern of body water, lean body mass, bone and fat is noticeable, differences between boys and girls show clearly. At this growing stage, nutrition is very important, the quantity required and quality is paramount. If parents look carefully, they will notice that, when plenty food is available, the food will be eaten up especially by boys, whether the food is rich or not it is not their business but just to satisfy appetite. The

influence of this is that it makes them grow fat and become obese if care is not taken. WHO in Rome (1998), reviewed the important requirement for protein, energy, vitamin A, folate iron and several other vitamins and minerals

The difference between poorly nourished and well-nourished becomes evident at growing stage. If poor diet is inadequate in both calories and calcium, it may result to stunted growth because lack of calcium results to poor skeletal growth. In line with this, the help of a counsellor is highly needed to pass across nutritional awareness to the adolescent, on the importance of eating balanced diet. Most of the time, the eating of proper nutrient does not have to be a difficult task. According to Lunsford (2008), teens crave for foods high in sugar, saturated fat, and sodium with almost no fibre. If left to themselves, most teens will live on fast food, snack and sugar drink. Students' diet should aim towards maintaining growth while sustaining health especially during puberty when they are undergoing a lot of physiological changes. Lunsford (2008),they should be getting variety of foods from different sources, eat food rich in iron so as to avoid anaemia, and also eat food rich in calories daily that is about 800 to 1,000mg with full glass of milk.

2.5 Nutrition and Health

Health is one of those terms which most people find difficult to define even though they have an idea of its meaning. Therefore, many definitions of health have been offered in various terms. Some of them are:

a. "The condition of being sound in body, in mind and spirit, especially freedom from physical disease or pain".
b. "Soundness of body or mind, that is, conditions in which its functions are duly and efficiently discharged.

c. "A condition or quality of human organism expressing the adequate functioning of the organism in given condition, genetic and environmental". Naturally health is the absence of diseases in an environment. In the above definitions health is more important than other needs in life and it is when there is soundness of mind that one can perform other activities.

The widely accepted definition of health is that given by the World Health Organization (2006), as "a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity". In recent years, this statement has been amplified to include the ability to lead a "socially and economically productive life".

The WHO definition envisages three specific dimensions–the physical, mental, and social aspect of health and many more may be cited viz. spiritual, emotional, vocational, and political dimensions.

(i) Physical dimensions: The state of physical health implies the notion of "Perfect functioning" of the body. The signs of physical health in an individual are " a good complexion, a clear skin, bright eyes, lustrous hair with a body well clothed with firm flesh, not too fat, a sweet breadth, a good appetite, sound sleep, regular activity of bowels and bladder and smooth, easy coordinated bodily movement. All the organs of the body are of unexceptional size and function normally; all the senses are intact; the resulting pulse rate, blood pressure and exercise tolerance are all within the range of "normality" for the individual's age and sex. This state of normality has fairly wide limits which are set by observing a large number of 'normal' people who are free from evident diseases.

(ii) Mental Dimensions: Mental and physical dimension of health are inter-related. It is not the mere absence of mental illness. Good mental health is the ability to respond to the many varied experiences of life. Poor mental health affects physical well-being also

and vice-versa. Psychological factors are considered to play a major role in disorders such as hypertension, peptic ulcer and asthma. Good mental health cannot be obtained in the absence of healthy eating.

(iii) Social Dimension: Social well-being implies harmony and integration within the individual, between each individual and other member of the society and between individuals and the world in which they live. Social health of a community depends upon its progress, broadmindedness, consideration, through fullness and sympathy towards others. It also depends on the education, productivity, social security, health and the level of nutritional awareness of its members.

(iv)Spiritual Dimension: Due to stresses and strains of modern life, it is very important for us to consider this dimension of health. An individual has to be at peace within him before he can be at peace with the world. Attention to moral values, ethics, exercise, and mediation are some of the ways of attaining spiritual health.

2.5.1 Determinants of Health

According to Rose (2013), health does not exist in isolation. The factors which influence health lie both within the individual and externally, that is, the society in which he or she lives. These factors interact and the result of these interactions may be health promoting or deleterious (reduce quality of health) to an individual or members of the community. Raphael and Dennis (2016), Important determinants of health are discussed below

1) Heredity

ii) Nutrition/ Lifestyles

iii) Socio-economic conditions

iv) Health and family welfare services

v) Education

vi) Others.

i) **Heredity:** The physical and mental traits of every human being are to some extent determined by the nature of his genes at the moment of conception. This genetic makeup is unique, that it cannot be altered after conception. A number of diseases are known to be of genetic disorder, e.g. chromosomal anomalies, sickle cell anemia, hemophilia, errors of metabolism, mental retardation, some types of diabetes, etc. The state of health therefore depends on the genetic constitution of man. That is why it cannot be totally concluded that nutrition is the genesis of the problem of some diseases.

ii) **Lifestyle / Nutrition:** the term life style implies "the way people live their life eating, drinking & others". Reflecting a whole range of social values, attitudes and activities. It is composed of cultural and behavioural patterns and lifelong personal habits (e.g. smoking, alcoholism) that have developed through processes of socialization. Lifestyle is learnt through social interactions with parents, peer groups, friends and siblings and through school and mass media. Health requires the promotion of healthy lifestyles; examples include adequate nutrition, enough sleep, sufficient physical activity etc. Health is both a consequence of an individual's life style and a factor determining it, recent health problems especially in the developed countries (e.g. coronary heart disease, obesity, lung cancer, drug addiction) are associated with lifestyles changes. In developing countries such as Nigeria where traditional lifestyle persists, risks of illness and death are connected with lack of sanitation, poor nutrition, personal hygiene, elementary human habits, customs and cultural patterns. In short, the achievement of optimum health demands adoption of healthy lifestyles.

iii) **Socio-economic Conditions:** It has long been known that socio-economic conditions influence human health and nutrition intake. Some of the important factors which determine socio-economic conditions are:

a) **Economic Status:** the per capita GNP (Gross National Product) is the most widely accepted measure of general economic performance. Economic status determines the purchasing power, standard of living, quality of life, size of the family and the pattern of disease and deviant behaviour in the community. It is also an important factor in seeking health care; ironically, affluence may also be a contributory sense of illness as exemplified by the high rates of coronary heart disease, diabetes and obesity in the upper socio-economic groups.

b) **Education:** the significance of improving nutrition awareness and practice in order to have a positive influence on food choices and health should not be underestimated. This study assessed the nutritional status and awareness of school students. One of the major factors influencing health status is education (especially female education). The world map of illiteracy closely coincides with the maps of poverty, mal-nutrition, ill health, high infant and child mortality rates. Studies indicate that education to some extent compensates the effect of poverty on health irrespective of the availability of health facilities. In India, Kerala is an example, Kerala has an estimated infant mortality rate of 29 compared to 104 for all Nigeria in 1984, and major factors is the highest female literacy rate of 65.7% compared to 24.8% of all-India.

c) **Health Services:** the purpose of health services is to improve the health status of population. The term health and family welfare services cover a wide spectrum of personal and community services for the treatment of diseases, prevention of illness and promotional of health, Immunization of children can influence the teenagers/prevalence of a particular disease. Provision of safe water can prevent

mortality and morbidity from water-borne diseases. The care of pregnant women and children would contribute to the reduction of maternal and child morbidity and mortality. All these are ingredients of what is now termed as “primary health care”, which is seen as the way to better health through the role of counselling and the health care services.

d) **Other factors:** Other factors which influence the health of populations beside primary health care are the formal health care system. This would include opportunities, increase wages, prepared medical programmes and family and counselling support system. In short medicine is not the sole contributor to the health and well-being of populations. The contributions of counsellors organizing intersect oral programmes (organizing a small nutrition awareness program) to the health of students are increasingly recognized.

2.6 NUTRITION COUNSELLING

Nutrition counselling is a process of helping an individual or group of people to understand why they make certain health choices. Nutrition counselling facilitates personal ownership in one’s life choices of food and provides the individual with nutrition awareness with the resources to make decisions that will be vital to their health and well-being.

Nutritional counsellors look out for some health tips in order to facilitate proper counselling and furthermore, counsellors for instance, are expected to identify sugary foods as dangerous food. According to Jeanne (2015), some health tips are as follow.

Some Health Tips for Students

Health Eating Tips 1

a) Cook more of your meal at home

b) Think of your diet in times of colour variety and freshness.

c) Read the labels especially packaged food.

d) Focus on how you feel after eating.

e) Drink plenty of water.

Health Eating Tip 2: Moderation

a) Eat as much food as your body needs.
b) Eat smaller portion of food.
c) Eat with others if possible.
d) Stop eating before you feel full.
e) Avoid eating at night, try to eat dinner early and fast for 14-16 hours until breakfast the next morning.

Healthy Eating Tip 3: Eat colourful fruits and vegetables, Fruits such as berries apples oranges and mangos, carrots, cabbage, spinach, and lettuce

Healthy Eating Tips 4: Eating healthier whole grains.

Healthy Eating Tips 5: Eat healthy fat and avoid unhealthy fats.

a) Unsaturated fat such as plant oil example peanut oil and olive oil, omega 3 from fish, unheated sun flower, corn, soya bean and walnut.
b) The ones to avoid are saturated fat such as fat from animals.

Healthy Eating Tip 6: Reduce sugar and salt such as candy, snacks and fried food.

a) Reduce sugar and salt in your diet.
b) Eat good meals in restaurants.
c) Use herbals and spices like garlic, curry power, black pepper.
d) Avoid sugary drinks.

Healthy Eating Tip 7: Add calcium to your food for bone and health, food containing calcium are vegetables green beans cabbage and lettuce.

Guidance and Counselling for Personnel and Parents who are Responsible for Monitoring of Snacks at school are highly needed. According to the British Dietetic Association (2002),states that Guidance and Counselling for personnel and parents are to establish a healthy environment at school, and that school personnel and parents should:

- Work together and where appropriate, consult nutrition experts to develop and promulgate a healthy eating policy for the school.
- Inform and educate other school personnel and parents about the importance of healthy snacks.
- Encourage children to be more physically active break to shorten snacking time and avoid overeating.

Incorporate nutrition knowledge into the school curriculum to educate students about healthy choices and avoid using food as reward.

2.7 Nutrition Eating Habits of Students

Academy of Science – National Research Council defines food habits as "the way in which individuals or group of individual in response to socio and cultural pressures, select, consume and utilize portions of the available food supply". The nutritional problems of secondary school students turn out to be correlated to eating habits which gives birth to so many diseases in their lives, their nutritional intake calls for much concern, in order to prevent students' obesity from worsening and to be able to combat diseases related to unhealthy eating habits such as obese, diabetics and others. This period of growth, physical and emotional growth of an adolescent, is very often under considerable stress and anxiety which are reflected in physiological and social behaviours. Lawrence (1990) states that interrelated behaviour can be manifested

in poor eating habits, poor selection of meals, failure to eat breakfast, lack of time, lack of parent and counsellor supervision.

According to Gabriel (2014), eating and drinking water at the same time can generate gases (flatulence) and these gases could either be exogenous or endogenous gases. Gabriel further says, quite a number of factors contributing to flatulence and he enumerates them thus; dietary choice could lead to excessive flatulence because some foods cannot be absorbed, meaning that they pass from intestines to the colon without first being digested and some food high in fructose or sorbitol such as fruits juice can cause increase in gas, due to delay indigestion. Secondly flatulence can also be caused by indigestion, indigestion occurs when a person has eaten too much and the food did not digest. The feeling of being too full, bloating, heartburn, gas and nausea are signs of indigestion. Olumakaiye adds that frequently swallowing more air, like when chewing gum, sucking an object such as pen tops, drinking carbonated drinks, and eating quickly can result to excessive flatulence. Thus, the level of nutritional awareness by the counsellor counts in the eating habits of our adolescents in order to maintain clean colon for healthy purposes and to make dietary changes and eating habits like watching the types of food to be eaten, the time of eating, the quality of food taken and pattern of meal.

Uddoh (1980), sees students as a phase of rapid growth and enormous appetites and it is during this period that children are often given nicknames like “glutton” of “pig” nevertheless, their hunger should be satisfied if they are to receive enough food to meet their normal physiological requirements. She also reports that even though both boys and girls require plenty of calcium and proteins, boys need more joules than girls, and boys tends to eat more than girls, while girls require more iron-giving foods to enable them cope with menstrual losses. Students are always eager to eat what so ever

comes their way, they want to test every food and at this particular time close monitoring is needed in the intake of dietary by parents or other monitoring agents which include professional counsellors. This period also provides excellent time for nutrition education in our schools. Food habits are strongly influenced by family especially the mother who appears to be authority or figure of skipping breakfast other meals.

Edward (2001) states that lack of breakfast has some negative impact on the students, a child who ate evening meal at 7pm with heavy digestion over the night and the child who is asked to go to school without replacement of the food that has been digested will find it difficult to concentrate in classroom activities. Eating more fruits and vegetable, cooking meals at home and reducing your fat and sugar intake, on the other hand, may help to improve mood and lower the risk for mental health problems. Offering a healthy breakfast is an effective measure to improve academic performance and cognitive functioning. Breakfast is an important way to start the day because it gives body energy and helps to wake up your brain for classroom activities due to the nutrient content. www.odc.gov/nutrition. Ekeh (1996). The world health organization (WHO; 1997) and Ekpenyoung (1998) assert that the high level of malnutrition among students in Nigerian schools is attributable to poor nutritional awareness and habit. This means that nutrition awareness in schools is capable of exerting significant influence on nutritional values and acceptance of healthful nutritional habits. In addition, some experts tend to opine that students with good nutritional habits manifest alertness and zeal towards various activities in school and perform academically better than poorly fed children. Okafor (1997); WHO (1997).

Males are not much concerned with issues of nutrition as the females do, instead they prefer masculine activities, culturally child growth standards, boys and girls that are

obese sometimes refuse to take their breakfast and also decide to go on a diet to lose weight, World Health Organization (2006). (Rukai 2005. O' Dean and Abraham 2001), states that some of this students don't have necessary information and training regarding weight control, nutrition needs and diet.

On the other hand, male students were found to have more nutritional practice than the female students by Azizi, Rahmani, Malae, and Khosravi (2010) out of 100 % nutritional practice male students were 55.76% while the female were 44.24% in nutritional participants.

Both male and female need proper nutrition to optimize growth and development and maintain healthy body weight with exception of calorie requirement, nutritional needs are generally the same for boys and girls at ages 1 to 13, according to the institution of medicine however age 14 and above development have some differences in their nutritional needs.

Since male students are physically bigger than the female students in muscular mass, their calorie needs are higher than the girls. According to guidelines for America 2010 estimates that while girl age 14-18 require 1,800 to 2,400 calories daily, boys in the same age needs about 2000 to 3,200 calories a day. The more active the students are the more calories he needs, to maintain a healthy body weight.

Protein needs of students age 12-13 is 34 grams daily regardless of gender but age 14-18 are higher than those of 12-13 and the requirement protein for boys is 52 grams while girls is 46 grams of protein each day. According to the institutes of medicine health fat diary, both male and female students should take 25 to 35 % of their calories each day. A female student who consumes 2000 grams of calories each day should aim for 56-78 grams of fat. While a male that consumes 2,500 calories a day needs 69-97 grams of fat daily.

Vitamins and mineral: with exception of iron, most vitamin and mineral requirements are the same for boys and girls; because girls menstruate monthly they need more of iron than boys.

1. **Principles of Healthy Eating**

Recommended principles made by the World Health Organization,(2000) the below are principles to help children;

- embrace variety;
- evaluate the foods you eat;
- limit packaged foods and read labels;
- achieve energy balance;
- increase consumption of fruit and vegetables;
- limit energy intake from fat;
- limit intake of free sugar; and
- limit salt (sodium) consumption.

Since behavioural and environmental changes take time to establish, school should implement school- based action plans to improve the school nutritional environment, in this 'Snacks to Choose in Moderation' and 'Snacks to Choose Less' could be replaced with 'Snacks of Choice' in the school environment.

2. **Snacks of Choice**

Nutrients such as carbohydrate, protein, dietary, fibre, calcium and other minerals or vitamins are vital to students as well as health and growth. School shops and vendors should primarily supply 'Snacks of Choice food items as they can provide students with nutrients and contain less fat, salt and sugar. This can prevent students from consuming excessive amount of fat, salt and sugar. According to World Health Organization vegetables and fruit are rich in dietary fibre, which can prevent over

eating by giving children a sense of fullness and help reduce their risk of developing obesity and cardiovascular diseases.

3. **Practices of Nutrition among Secondary School Students**

The following points should be kept in mind.

1. The planned diet should be well balanced with increase in calcium requirements; extra milk can be provided, if possible. For an adolescent, from low socio economic status (SES), cheaper calcium rich sources should be provided like parched grains, whole grain cereals and pulses and green leafy vegetables. The diet should also contain sufficient energy sources to meet the increased energy requirements. Girls tend to be anemic as their iron requirement decreases considerably due to monthly period. In practicing nutrition, iron requirement should be taken care of by providing green leafy vegetable, whole grain cereals and pulses, and if possible, egg, meat, liver and fish.
2. Likes and dislikes should be considered.
3. Socio economic status (SES) of the family should be kept in mind. An adolescent from low SES may want to imitate his classmates from high SES with respect to the purchase of high cost snacks. To avoid this, they should be given cheap snacks yet attractive and nutritious snacks during lunch time.
4. There should be variety in terms of colour, texture and flavour. The adolescents are fussier, especially girls about eating at home. Meals served if attractive, will encourage them to eat at home.
5. If tiffin (light midday meal or snacks at lunch) is to be given, it should be nutritionally balanced, more so if it is in place of a main meal.
6. Seasonal drinks like cold/soft drinks and tea/coffee may be included to make the day's diet interesting.

7. Satiety value of the diet should be taken care of, especially for the boys. If they are still hungry, extra salad can be provided.
8. The meals should be served in a pleasant atmosphere.
9. ‘Snacking” in between meals is common amongst adolescents. Snacks should be wholesome and not only a source of energy but also proteins and other essential nutrients. Institute of Medicine (2003).

Table 2.1 ***Recommended Daily Dietary Intake of Nutrients for Adolescents (as revised in 1990, ICM***

Group	Particulars	Net calories (K.cal)	Proteins (g)	Fat (g)	Calcium (Mg)	Iron (mg)	Retinol (mcg)	Carotene (mcg)	Thiamin (mg)	Riboflavin (mg)	Nicotinic Acid (mg)	Vitamin B6 (mg)	Ascorbic Acid (mg)
Boys	13-15 years	2450	70	22	600	28	600	2400	1.0	1.2	14	2.0	40
Girls	-do-	2060	65						1.3	1.6	17		
Boys	16-18 years	26-40	78	22	500	50	600	2400	1.0	1.2	14		
Girls	-do-	2060	63			30							

2.8 Effect of Nutrition Awareness and Practice on Students

The studies about the level of nutritional awareness and practice among students show that students need vitamins and minerals to function properly, especially during growth. Most fast food or junk food lacks these nutrients. Nutrition has a strong effect on the growing teenagers. Some poor nutrition can also have negative effect on teen students especially like their classroom work. It can also affect their health or body circulatory system, reproductive system, digestive system as well as mental and emotionally stability. The immediate effects of unhealthy eating patterns include under nutrition, iron deficiency anemia, overweight and obesity. More, moderate under nutrition can have lasting effects on students' cognitive development and school performance. Undernourished students can attain lower scores on standardized achievement test, especially test of language ability Devaney (2009). When students are hungry or undernourished, they have difficulty resisting infection and they are more likely to become sick to miss school and to fall behind in class. Undernourished students have

low energy which can limit their physical activity, and skipping breakfast can adversely affect students' performance in problem solving task.

Erikson (2013),is of the view that the more nutritious a meal is, the better the neurotransmitters function. She further observes that food that contains complex carbohydrates and proteins can help dispel amino acids from the brain, helping the neurotransmitters to work more efficiently. In addition, she states that foods such as eggs contain tyrosine, which helps the brain to feel more alert. Erickson (2013) further points out that poor balanced nutrition can cause abnormalities in adolescent, that is, improper nutrition such as lack of vitamins and minerals can result to a condition known as anoresianerrosa, and can alter the brain's communication with the endocrine hormones, which in female can result to cease in menstruation. She further states that when an adolescent consumes a lot of sugar, the insulin cannot do its job properly and the blood sugar level drops, as a result, a child can feel moody, angry and agitated, the simple sugar from carbohydrates directly are best for the brain, not the raw sugar that are refined or processed by man. According to Rose (2014), 12 million Nigerian children suffer stunted growth due to poor feeding practices and diseases; in addition, she states that Nigeria is the second highest in the world after India has been attributed to have higher level of under nutrition among children.

Despite the fact that global trends indicate a gradual decline in the rate of stunting, Nigerian's rate still remains one of the highest in the world with alarming number of stunted children. In this case poor diet stands as a barrier to the growth of the children in Nigeria. Poor diet has been found to affect the way a student learns and develops. Poor nutrition can actually interfere with brain development, it affects the way a child's brain processes in the classroom, stores, analyzes and receives information and this can

make it difficult for a child to concentrate and focus on reading, spelling and maths problems. Balanced diet encourages better learning. Erikson (2013).

Most studies also have indicated that fast food has a great negative influence on the adolescent. In many parts of the world, increased consumption of fast food has created a 250 percent increase in obese among teenagers in secondary schools between 1980 and 2008, according to the National Institutes of Health, obese teens face a greater risk of eventual diseases, including certain cancers, type 2 diabetes and heart diseases, as well as early death. Other research as have suggested that metabolic syndrome cluster and obesity makes developing type 2 diabetes in teenagers as adult two times more, Mark Desoer (2008), likely nine out of 10 over weight kids are not just obese ones but already have at least one harbinger of heart disease which can result in dying prematurely compared to non-obese. When children are not properly fed, it can result to anaemia. Walker (1998), states that teens that are anaemic are significantly more likely to have poor academic achievement, poor school attendance, early sexual activity, and it could also result to school dropout. Anaemic problem is as a result of lack of vitamins like iron from the food which these adolescents eat. Food and drug administration (FDA) places emphasis on iron and calcium because of the special roles these nutrients play in students' development.

Lack of iron can lead to anaemia, and sluggish feelings during the day which negatively affect alertness in school, at work and even during sports participation. Iron intake is especially important for teenage girls, as menstruation depletes iron. Right intake of calcium is very important for future health and for building bone mass. Walker (1998), states that regular consumption of junk food such as fast soda, potato chips and other popular snacks may likely have the following effect on the reproductive age students.

- It increases risk of heart disease;
- Risk of becoming obese now and later in life;
- Some cancer is related to excess fat and sugar intake; and
- Increased tendency towards hypertension, these junk foods are prepared with heavy sugar, butter and some artificial flavour all around us, especially in school environment.

According to Kevin (1989), students eat at fast food restaurants 6 times a week and that these youths need vitamins and minerals to function properly especially during growth. He further stresses that most of these fast food lacks the nutrients. Examples are bottled drinks and short bread cookies which weigh 14 grams and contain 10 milligrams of potassium. It was discovered that most of the fast foods have too much sodium, which elevate blood pressure and this can cause heart attack and strokes.

Kevin (1989) points out that those adolescents should consume not more than 2,400milligrams per day and many fast food restaurant items contain more than half that amount. Junk food tends to be high in sugar, fat processed grains and low in fibre, making the food 65-100% more calorically dense than other meals. Harvard medicine school survey (2004) found 4 out of 5 of every 5 persons did so in 3 of the restaurants observed eating, junk foods that is more calorically dense.

Relcherch (2011), lists the following effects of poor nutrition in adolescents, which depend on what they feed:

- Low energy: Poor brain functioning
- Low calcium: Poor bone development
- Low Iron: anaemia.
- Risk of obesity, weaknesses, tiredness, head ache, stomach ache and weakness of the organs.

There are some effects which nutritional levels have on students. Poor nutrition affects their reproductive system in delayed puberty, infertility/sterility, both in male and female, irregular ovulation and reduction of sperm production. Sodium imbalance can affect the osmotic pressure and the pH, when there is a disturbance in the concentrations of sodium in the extra-cellular fluid of the body tissues and when there is a retention of sodium in the tissue, oedema occurs. In this case, we reduce the intake of sodium so as to avoid oedema. Excess sodium loss as a result of hot weather can cause muscular weakness, cramps fatigue, vomiting and loss of appetite. At this point, a small amount of salt may be added to liquid intake, Relcherch (2011)

There is need for nutritional awareness because most students do not actually know what is good for them and what is not, most parents have their own busy schedules. Kids are not taught the basics of nutrition and how to prepare healthy foods. They should try as much as possible to drink natural water than soda or sugary drinks and not that they should cut out the snacks of fast food which contains the sugar and sodium completely but good nutrition should out weigh such foods. The developing students should be allowed to enjoy an occasional burger or pizza, may be once a week, they should also be encouraged to opt for smaller portions.

According to Relcherch (2011), adolescents should be made to realize that they are what they eat, therefore the option for healthier choices arise. The idea is to inculcate healthy eating habit in them, and more nutrition should be packaged for these students to take to their school for lunch. Nutrition is very important to students' health with regards to schooling. In recent times the present democratic government in Nigeria have venture into providing school children with lunch during school hours. This growing awareness requires the participation of school counsellors to support and play a role which will serve as a link between children nutrition, health status, educational

participation and performance. The fact is that educational development should be concerned not only with improving the infrastructure of learning, but also with what can boost the students' active learning capacity. (Levinger 1994),supports this initiative by stating that lunch food should be part of larger school nutrition and health programmes, together with healthy education or provision of safe drinking water and toilets in school. He further states that school lunch food in the cafeteria can be supplemented with certain micro nutrients or vitamins if they are missing from children's normal diet.

2.9 Theoretical Framework

Scholars in various fields and subjects have established relevant theories among which are Abraham Maslow's Needs Theory, Albert Bandura Theory, Murray Theory and Theories of Self- Awareness by Duval and Wiklund. Many of these motivational theories explain the hierarchy of needs, and one major need is that people want a guide in order to secure the future and have satisfaction in whatever they are doing and without learning or changes in behaviour, this cannot take place. The counsellor needs some of these theories as an aid in order to carry out nutritional awareness and nutritional practice effectively among secondary students. These theoretical frameworks on which this research is based are Abraham Maslow theories of need, Albert Bandura's Social Learning Cognitive and Self- Awareness Theories by Duval and Wicklund. This is because these theories will help the counsellor identify the basic needs of man and how to cope and adjust to situations in life in line with this study. The theories are discussed as follows.

2.9.1Abraham Maslow Theory

The needs of nutritional awareness and practice among students can best be explained using the theories of motivation as hierarchy of needs by Abraham Maslow. The theories of motivation is of two, either internal which is within the individual or external influence, the type of motivation that arises within the individual is known as intrinsic motivation while those that are attributed to external factors are known as extrinsic motivation. The work of a counsellor is made easier when his clients (students) are motivated. Motivated students are eager to learn about eating balanced diet and eating what will not make them to be out of shape. With this, the counsellor, teacher or parent will be challenged to plan youth adequate diet table. Motivation is defined by Eggen and Kauchala (1992) as "a force that energizes and directs behaviour". Motivation is a force that arouses and sustains action until a goal is achieved. It creates a desire to seek more tasks in the direction of the object giving the motivation. The intrinsic motivation implies natural motivation, students have a desire to acquire skills, information, attitude and values, this explains why people ask questions or imitates behaviours of others either of parents, peers and other people in the community. This attitude of having self or inner motivation will make the students work hard to get more awareness on nutrition that will help him or her develop well in order not to have problems in future especially ill-health problems. A child who has access to information on why eating good food is necessary will want to keep to it to secure his future. For instance, information in the area of infertility and low sperm production as a result of poor Nutrition may think twice.

Maslow's hierarchy of needs is one of the most famous theories that emerged from humanism. This theory states that people have a drive for self-realization. He believes that everyone strives for self-actualization and self-actualization is reached by

first satisfying basic needs before one is free to reach for higher ones such as Physiological needs – that is, the survival needs food, water, nutrition, shelter, security, oxygen, safety needs, they also needs freedom from physical and psychological threats, which is also referred to as securing needs and protection from drug abuse, threats, embarrassment, ridicule and lack of shelter. These people need to feel safe and secure (peace and health).The teenage students will want to guide against malnutrition, which can either be underfeeding or overfeeding as this could lead to any of the problems (anaemic obesity etc) mentioned above. This is to guide against embarrassment mentioned by Abraham Maslow's hierarchy of safety need.

Self-Esteem: Everybody needs self-esteem that is, self worth seeking recognition. Everyone in a society has the desire for a stable, firmly based, high evaluation of self which leads to the desire of strength for achievement, for adequacy of confidence in the face of the world of challenges and for independence and freedom. When a teenager is too fat or obese he or she will feel bad all the time, especially when with friends and as well as when he or she is too thin or kwashiorkor in nature. This could be due to poor diet or deficiency of the basic needs. When these basic needs are met, the individual becomes satisfied and move to seek the satisfaction of the next needs in Maslow's hierarchy of needs that is, the growth needs.

Self-Actualization: When a man is healthy and can reproduce the young ones, he has a feeling of self-fulfilment and self-realization, the individual seeks satisfied and strong sense of contribution to the society he lives in. Educational implication of Maslow's theory states that, a hungry child is an unmotivated child, if students come to school and they are tired and hungry then the desire to learn certainly diminishes in the classroom, students who are threatened by potential embarrassment are less motivated to learn and achievement is reduced, even their level of mental alertness will not be

there if there is nutritional deficiency. Martine (2007) states that Maslow's theory of hierarchy helps any organization to manage and increase the efficiency, productivity and profitability. This theory is also of use to nutritional counsellors in enhancing the efficiency, productivity and profitability of the (clients) students through nutritional awareness on eating balanced diet which is capable of boosting (memory) academic performance. Mark (2012) reports that starvation with no nutritional sources to people won't deem the upper level needs importance before their physical need (which is, to feed him). This means, food is paramount in one's life. When students are satisfied, they can be eager to move upward. With this, Maslow's hierarchy of need has a great relationship on nutritional practices in the sense that it impacts students performance and learning in the classroom. Schools and government agencies have long realized that if students' basic needs are not met, students' performance will suffer. The practices of free feeding (breakfast) programs in Kaduna state could be a direct result of such considerations. Lack of proper nutrition, can affect many of today students. This basic need must be met before the students can reach the next level. More so Students safety needs play a critical role in achieving students' success, Charles Brickman (2005).The counsellor here serves as a motivator through various actions by finding out whether the basic need (food) of these teens are met, especially eating balanced diet.

2.9.2 Social Cognitive Theories

Albert Bandura (2006) is a leading proponent of social cognitive theory. He notes that people learn consciously or unconsciously, intentionally or unintentionally by observing the behaviour of others and the consequences of such behaviour. In this theory, observation is very important hence, it is also called observational learning. Four key components of the social learning theory are: model, imitation, observer,

(behaviour of interest) and reinforcement. Modelling, imitation and reinforcement which form the bedrock of the social learning theory are relevant to nutritional practical. From this perspective of this theory, nutritional practice among adolescents can be seen as an attempt to identify with a role model. If a teenage student has a role model who is a glutton or who eats everything he or she sees, such student may likely get involved because he wants to imitate his or her role model, he gets involved in eating all types of food. So likewise in the family, if either of the parents eat a lot and consume sweeten foods, the children sees nothing wrong in consuming sugar foods even in drinking and smoking. Consciously or unconsciously, such parents contribute to the substance abuse and glutton among their children.

Similarly, when some parents are not disciplined to cook their meal at home but always go to Mr. Biggs or feed on snacks or junk foods, the teenage student who sees them as a model becomes careless about what he eats, they also go out to eat the same. Quite a number of these students confessed that they enjoy eating a lot of snacks and soft drinks because they are fast and tasty. Some students from low economic status want to associate with students from high economic status in eating junk foods as a result, either directly or indirectly, the environment with fast food impact negatively on students who see them as models. Most advertisements on bill boards, television, radio and other print and electronic media use students or young stars model and other popular adults to promote eating of sugar food or other related products e.g. like burger, lacassera and pizzas. Such advertisements have great impact on the eating habit of the students, and according to Bandura's cognitive theory, students learn by imitation, watching and hearing. Notable contributors to social cognitive theory is Miller and Dollar (1991), they develop theory of Reinforcement of personality, Dollar stated four basic factors of reinforcement; 1.Motivation, 2.Stimuluis,

3.Action,reinforcement and 4.reward, these are all in the process of learning or acquiring a behaviour or formation of personality. Rotter(1954),is of the view that the formation of behaviour depends on the interaction of the individual with his meaningful environment. Rotter, suggests that most children behaviour is learned, and that they learned by imitation especially at their early stage with these, parents must be a good role model on what they feed on and should teach their children how to cook their food in order to avoid future diseases.

The social cognitive theory is relevant to health communication. First, the theory deals with cognitive, emotional aspects and aspects of behaviour for understanding behavioural change. The concept of social cognitive theory provides ways for new behavioural research in health education. Core assumptions and statements state that the social cognitive theory show people acquire and maintain certain behavioural changes depending on the environmental factors of people and behaviour. Social cognitive theory provides a framework for designing, implementing and evaluating programs. Environment refers to the factors that can affect a person's behaviour like social and physical environments. Social environment include family members, friends and colleagues. Physical environment is the size of a room, the ambient temperature or the availability of certain foods. Environment and situation provide the framework for understanding behaviour (Pardeck, 2011). The situation cognitive or mental representations of the environment may affect a person's behaviour. Gates and De Lucia (2006), state that environment provides models for behaviour, observational learning occurs when a person watches the actions of another person.

2.9.3 Theories of Self- Awareness

This is one of the theory the counselors can use in nutritional awareness and practice among students of secondary schoosl, the theory was formed by Duval and Wicklund(1972), and it states that when we focus attention on self, we evaluate and compare behaviour to our internal standards and values, then become self conscious as objective evaluator, this means the students can evaluate their lifestyle in line with the type of food they should eat, Self-awareness does not occur suddenly through one particular behaviour, it develops gradually through a succession of different behaviours all as which relate to the self. The monitoring of one's mental states is called mental-cognition and it is considered to be an indicator that there is some concept of the self. Self awareness through self-exploration and social world one becomes more familiar with the self. This particular type of self development brings conscious of one's own body and mental state of mind including thoughts, actions, ideas, feelings and interactions with others. So individual becomes conscious of themselves through the development of self-awareness.

A person's belief in their ability to succeed sets the stage to how they think, behave and feel. Someone with a strong self-efficacy for example, views challenges as mere tasks that must be overcome, and are not easily discouraged by setback but rises to move forward. The students are aware of their flaws and abilities and choose to utilize these qualities to the best of their knowledge. When they are aware of the diseases that the bad eating behaviour will cause them, they now choose what to eat and what not to eat although they may not be aware of these negative reactions of some foods, and therefore do not always change their attitudes according to Bandura's (2002) social cognitive theory emphasizes the role of observational learning, social experience and reciprocal determinism in the development of personality. This signifies that

students should be observant to what they eat so as not to fall in to underfeeding or overfeeding. With these theories, the counselors will help practice the right type of foods to be taking and at what time and who is to take what.

Major techniques that may be used in handling nutritional diet are;

1. **Self Monitoring:** Using a special eating habit dairy to chart how the client eats.
2. **Nutrition:** Instruction on the importance of a balanced diet.
3. **Exercise:** Non strenuous moderate exercises increase weight less improves cardiovascular functioning and reduce hunger.
4. **Stimulus Control:** Clients are appraised of the potential influence of food rated cues in their maladaptive eating patterns.
5. **Relaxation Training:** Participation in non fattening responses to bad situations.
6. **Family Support:** clients are reinforced for achievements.

2.10 Empirical Study

The empirical studies of this research work, centred on a critical appraisal of work in relation to the present study. Appraisal is one of the techniques the counsellor will use to enhance good practice of nutrition in this study. From the previous studies of this research, the organization for economic co-operation and development (OECD) views nutritional awareness as "a main tool for preventing increasing rates of obesity and unhealthy diets in OECD countries, but in this study is not only to prevent but to build good eating habits among students in Kaduna State. The European public health professionals and other stakeholders appear to agree that nutritional knowledge is one of the most important policy options for obesity prevention, but food and health education where considered relevant. This is supported by research showing that consumers value the one pack provision of nutrition information. Some studies, find that men who consumed more full fat dairy products were found to have decreased

sperm production and concentration. It was reported in another study that, increased carbohydrate intake among young men was related to decreased sperm concentration. Two other studies explored the relationship between women's nutrition and pregnancy rate within vitro fertilization treatment, both studies found some association between protein rich diets and higher rate of pregnancy. The study begins to point to a possible relationship between what we eat and our fertility as noted by Richard Reindollar, (2009).

A recent study among children shows that a higher risk for excess body fat during childhood 100% sweeten food are the largest source of added sugar, it also shows that 80% of youth drink sugary drinks, research shows that children eat more sugar without realizing it, if it has larger calories or not, Wang YC, Bleich SN. Gortmaker (2004). Jirayu e tal (2011) carry out study on relationship between knowledge and practice of food and nutrition of adolescence. The tests and questionnaires were used to gather the data from 346 samples. Stratified Random Sampling was used. The data was analyzed by using percentile, mean, standard deviation, t- test, one way analysis of variance and Pearson's Product Moment correlation at 0.01- 0.05 significant level. The study found that there was a positive relationship between food and nutritional knowledge awareness and practice of the adolescence at 0.05. Some studies have found out that consumption of sugar sweetened beverages (SSB) particularly carbonated soft drinks, may be a key contributor to the epidemic of overweight and obesity. The study focused on being aware of what you eat to avoid being overweight and diseased.

The weight gain that intake of sugar sweetened sodas, (SSS) a school based intervention found significantly is soft drink consumption and prevalence of obese and overweight children in the intervention group than in control group, subjects after 12

month, one recent 25 week randomized controlled trail in adolescents found further evidence linking SSB intake to body weight. The weight of epidemiologic and experimental evidence indicates that a greater consumption of sugar sweetened brewages is weight gain obesity associate.

According to the World Health Organization (WHO), 1 billion adults throughout the world are overweight with a body mass index (BM); inkg/m, 25% of these million considered obese 2/3 are among adolescent which could lead to serious health complication in adulthood. National survey data in the United States have indicated that, over the past 20 years with the increase in rates of overweight and obesity consumption of carbohydrates, largely the form of added sugars, has increased between 1977 and 1996. That the proportion of energy from the consumption of caloric sweeteners rose from 13.19.to 16.0% and in 1994-1996 > 3% carbohydrates are consumed in the United States. In 2000, Americans advised and counsel the public to choose beverages and foods that will decrease their intake of added sugars and the WHO has suggested that added sugar should be provide not more than 10% of dietary energy. The end product of carbohydrates is sugar then adding too much artificial sugar to food is dangerous to health.

Research was conducted to determine the association between under malnutrition and dieting diversity among school age children in south western Nigeria. A total of 600 school children were randomly selected from six private and pupil schools in the region. A questionnaire for calculating a dietary diversity score was adopted, tested and used for all students. Weight and heights measures were taken and these calculated to determine the prevalence of underweight stunting and wasting respectively. Result found groups at the lowest levels in the children's diet were organ meats, milk, eggs, and vitamin A rich fruits and vegetables, Olumakaiye(2013).

The participants consisted of 204 girls (51%) and 196 boys (49%) with average age 13 ± 1. Totally, 27% of participants were studying in the first grade, 40.8% in the second grade and 32.3% in the third grade. Most of the students' fathers were self-employed having diploma and higher education, with mothers having secondary school education. Many students had 1-2 siblings. The rate of obesity was recorded among 23.8% of the students (21.4% boys and 26% girls). Also, most of the students consumed snacks at school. The students received the nutrition information through parents and lecture and were more interested in receiving information about foods ingredients, the results indicated that 71.8% of the students had breakfast and 86.2% consumed snacks. The participants' rate of awareness and attitude were 61.5% and 89.3%, respectively and were in acceptable level of using snacks). With regard to practice, majority (82.5%) of students were at average level and only 9.3% of them showed an acceptable nutritional practice. Generally, 64.9% of student participant consumed unhealthy snacks and 35.1% used healthy snacks. Statistically, meaningful association was found between grade and attitude but no significant relationship regarding awareness and practice respectively, a statistically significant relationship existed between gender and awareness but not practice.

Abdollahi, Amini, Kianiar and Dadkhah-Piragbag (2008) in their study show proper scores for awareness and nutritional attitude of their participants (75% and 51%, respectively). But, only 29% of their studied population obtained appropriate food performance score. The correlation coefficient value between awareness and attitude equalled 0.26, which indicates that increased awareness and trainings affected the student behaviour; however, just trainings would not be effective because preparing proper training materials has a significant role. The gap between awareness, attitude and nutritional behaviour particularly about consuming fresh fruits and vegetables

among fourth to sixth graders was considerable. This indicates poor attitude of the age groups towards nutrition as an important health factor since the quality of eaten foods was significantly poor and did not meet growth needs of the students.

Furthermore, different factors including body image, parents' food patterns, peers pressure, teachers, media, advertisements and physiological needs were also influential. Characteristics of family such as parents' level of education, job, socio-economic status and number of children have a great impact on nutritional behaviour and practice as well as the students' physical activity at school accordingly, the present study, examines the relationship between the participants' level of education and the job of parent's and the students' attitude, awareness and practice. However, found no statistically meaningful association between mother's job and education and father's job and awareness, attitude and practice on using snacks.

A significant relationship was observed between father's education and the students' awareness and attitude for eating snacks, Fu ML et. al., (2007) noticed that Taiwanese children with higher educated parents had a better food pattern, so that, only 20% of the children with educated parents consumed candy and fried foods compared with ordinary children. Changes in food pattern in children is influenced by their developments and access to foods at different levels of education and the amount of attention they receive from their parents on food patterns. For instance, parents stress on young children is how to eat appropriate foods and" physical activities, but in older age group they put more emphasis on avoiding alcohol, drugs and sexual behaviours. The results of longitudinal study indicated that children's food patterns remarkably change as they grow up. These transformations reflected the decreased consumption of fruits, vegetables, deserts, meat and milk and increasing rate in eating different drinks particularly sweet drinks, salty fast foods, sea foods and beef.

Adrian Perez , (2005) investigates food pattern and its different forms in ages 4, 8, and 11 in Texas. They conclude that 8 and 11 ages prefer consuming hamburger and other meats, cheese, bread and creamy pastry; and by far age 4 inclined to eat cereals, milk, yogurt, and fruit. Furthermore, eighth and eleventh ages had remarkably more snacks than the fourth age. The reasons for such considerable change of food pattern could be increased autonomy and physical activity of students and reduced parental supervision as children grew older. However, several studies indicate the improved rate of nutritional awareness, attitude and performance in older ages, this therefore might be due to the impact of training and life experiences. Other studies indicate that as students get older, they go to school without eating breakfast. In the current study, a statistically meaningful difference was found between mean score of attitude and grade in three educational levels, but not in relation to awareness and practice. Also, mean score of awareness show a significant relationship with gender, but there was no meaningful relationship in regard to attitude and practice.

Thomas, (2008) conclude that there was a significant disparity between nutritional practice of girl and boy students, as boys received higher amount of energy and protein daily compared to girls. Other studies have suggested that girls' level of nutritional awareness and attitude is higher compared with boys. The difference between the level of awareness and attitude in boys and girls is attributed to expectancy of their social roles. In this context, further studies are required to obtain better insight. On the other hand, Leen and colleagues found no statistically meaningful difference between frequency of consuming vegetables, dairies and sweet, fatty or salty foods among boys and girls. Unhealthy food habits among the participants of the present study highlight serious health risks in the adolescent age group which leads to the prevalence of obesity and chronic diseases in the next two decades. Accordingly, it is

significant to prepare curriculum for training children to have healthy lifestyle and sufficient physical activities at schools and throughout the country. On the other hand, to make these programs more effective, the nutrition policies have to be consistent with the awareness of nutrition in the society. In this context, the government must cooperate with industry, consumers, and social media. One of the most effective aspects of public involvement in solving health problems is active participation of children and adolescents in such programs. Children acquire a better perception of these concepts if they participate in medical trainings along with others. Children are the future parents; hence no child should leave the school unless they learn about healthy lifestyle and have sufficient knowledge about mental, emotional and physical health.

In this regard, schools should be a functionary media to provide trainings and information about healthy lifestyle for future generation. One purpose of educational programs is to encourage students to take responsibility of transferring their awareness, and practice that plays a considerable role in social changes. Several researchers have concluded that if the participation programs are held at schools, it would be a major step to ensure students' health and subsequently, the health of the community. Doubtless, extending the children's roles beyond absolute receivers of medical training will shorten the long path of health improvement projects. The limitation of this study is its descriptive nature, due to time limit. Findings of Ikorok (2011) on knowledge of nutritional values reveal some variations in the responses on knowledge of food values. For instance, all the respondents accepted that nutrition is needed for growth and that water is needed for digestion. Also, 97.9% identified correctly the major sources of protein, while 92.4% indicates correctly too that protective foods are needed for development of bones. Only 24.5% were able to indicate correctly the sources of

energy giving foods. Also, 90.0% accepted that fatty foods help in regulating body heat, while 66.9% could identify the sources of nutrients needed for normal body functioning, an average score of 69.19% was recorded generally for all the correct responses on knowledge. This tends to suggest that more than half of the respondents had a substantial level of knowledge with respect to food values; the score is an indicator for successes in nutrition education in the area. The score was also slightly higher than the result (54.2%) of Waterlow (1998) on determining students' nutritional knowledge in Kabba Local Government Area of Kogi State, Nigeria. The findings indicate that students were generally knowledgeable in view of very high scores recorded for most items in the list of variables. This, however, not becloud the need for intensive nutrition education in schools as well as in the community considering the fact that only SSII students were involved in the study. It is possible that students in lower classes may not record similar findings. Intensive health education is still indicative in view of Ikorok (2011) assertion of strong relationship between nutritional knowledge and nutrition education in all cultures.

These findings of Ikorok were in congruence with the findings of Okoro (1991) in the study to determine nutritional knowledge and practice of women in Owerri Urban. The result also corroborates findings of a similar study by Ikorok and Udondata (2005) on child care practices of mothers in Akwa Ibom State. Based on the results of these findings, it could be inferred that there is hope for successes and sustainability of nutrition awareness programmes in the area.

However, these findings contrast that of Rita (2000) which aims at determining mothers' nutritional knowledge in India, whereby only 10% of mothers could identify correctly the age to introduce weaning diet to the babies. The findings are also in line with that of Ikorok and Ekpenyong (2005) in their study on child nutritional practices

of nursing mothers in Akwa Ibom State. It is possible that the increase knowledge of students in this study is as a result of the use of a formally planned educational curriculum for programmed instruction within the formal setting of the school environment. It is, therefore, necessary that health educators should endeavour to consciously plan their instructional programmes on nutrition. These again suggest that use of a planned and consistent programme of instruction for health education is effective and should be adopted for community-wide nutrition awareness programmes.

The family income influence on nutritional behaviour was not a surprise due to several experts' assertion on such relationship. Okoro (1991) and Ekpenyong (1998) in their studies indicate that family knowledge and income level determine food choices, quantity and quality of food consumed. The implication is that level income in turn influences children food choices and eating pattern even in school. Since almost all of the schools selected were day schools, the students depended essentially on whatever was available to them in the family. Further findings on gender and nutritional behaviour produced similar responses. Female students indicated more positive nutritional behaviour than their male counterparts. This result may have been influenced by the availability of females in this culture with respect to food production and processing activities as assigned by their gender role.

The inference from findings of this study also corroborates findings of similar studies (Ikorok, 2001; Ikorok and Udondata, 2005) that social and cultural factors exert much influence on behaviour. These factors, therefore, should be considered in all health education interventions. Ikoro found that knowledge of nutritional values has a statistically significant influence on nutritional behaviour of secondary school students in Akwa Ibom State. Also, family income has a statistically significant influence on nutritional behaviour of students. A dietary diversity score may be to identify school

children that are under nutrition. Method of improving dietary diversity in meals at school and home are likely to benefit children at nutritional risk. Data for the study were collected using an interview schedule. The study demonstrates that malnutrition existed in study area among school children under nutrition (washing, stunting and underweight) was much prevalent in public schools while overweight, obesity was found in private school students. Recommendation on this study is that the nutrition educators, school administrators, teachers and counsellors have roles to play in ensuring dietary diversity by educating and counselling the children on the importance of eating a variety of healthy food incorporating nutrition into the school curriculum and establishing nutrition clubs, counselling centres and also have a policies that people should follow in delivering nutritious meal. Olumakaiye (2013).

2.11 Summary

The chapter looked at the framework on which the research would be based the theoretical framework chosen for the study consists of three theories, the first theory is for awareness and the second for practice the third theory is for the both awareness and practice of nutrition. Abraham Maslow's hierarchy of needs that shows that the first thing first before moving to the next level, that food is what one needs to move forward and without food students' cannot concentrate in class. Bandura social cognitive theory which talks on imitation and reinforcement that students sometimes imitate parents or counsellor especially parent who owns the kitchen and may help to control eating habits and desires of unhealthy food. Reinforcement with praise to students who had been counselled of becoming obese will do better in nutritional practice. Self-awareness or self-evaluator's theory, the self-awareness theory is that there is a need to be cross matched between what people advised and what one advice himself and between their

awareness and practice place before them. Lack of awareness of nutrition reduces their sense of practicing good eating habits.

Again, the chapter looked at the literature review that addressed issues pertaining to health. Avioli (1985) affirms that malnutrition is an impairment of health either from a deficiency or excess or imbalance of nutrients. There is no doubt that students are prone to obesity, heart disease and diabetes where there is no nutritional awareness or nutritional education and practice. As educated and well-informed students on nutrition will in turn ensure the total education of the whole family and peer groups, which will in future give birth to a healthy people, Relationship between awareness of nutrition and practice of nutrition, it is also the first study locally that intends to establish relationship between these variables.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes the methods used in carrying out the research study. This is done under the following sub-headings; research design, population for the study, sample size and sampling procedure, instrument for data collection, validation of the instrument, procedure for data collection and procedure for data Analysis

3.2 Research Design

The researcher used correlation research design in this study. The findings from correlation design were used to generalize the researcher's results on the target population. Correlation study is the study of the relatedness of two groups; correlation is one of the research studies that can measure two variables and determining the degree of relationship that exists between them Khan (1989). Describe it as the relationship between two or more paired variables or two or sets of data. Correlation descriptive research design is one of the most basic type of enquiry that aims to predict the important factors associated with that situation, Age, Location, Gender and other interest of concern are measured in their natural settings.

3.3 Population for the Study

The total population for the study comprised all students in public senior secondary school in Kaduna state. The target population was two hundred and seventy one thousand, three hundred and thirty five (271,335) students. This consist of one hundred and sixty- six thousand, seven hundred and sixty three (166,763) male SS students, and one hundred and four thousand, five hundred and thirty- two (104,532) female senior secondary school students.

Table 3.1: Population for the Study

S/N	Name of educational Zones	No of Schools	Total Pop. of SS(Male)	Total Pop. Of SS (Female)	Total Pop. of male & Female
1.	Kaduna	36	17,624	6,452	24,076
2.	BirninGwari	17	11,135	8,132	19,267
3.	Anchau	51	10,435	5,236	15,671
4.	Kafanchan	49	8,096	7,265	15,361
5.	Giwa	31	10,324	7,821	18,145
6.	Riga Chukun	30	4,321	1,643	5,964
7.	Zaria	41	18,432	8,657	27,089
8.	Zonkwa	44	10,765	4,763	15,528
9.	Lere	39	15,509	7,342	22851
10.	Kachia	62	27,541	15,845	43,386
11.	Godo-Godo	31	12,365	9,873	22,238
12.	Sanbo- Tasha	58	20,216	16,543	36,759
	Total	479	166,763	104,572	271,335

Source: Kaduna State Ministry of Education, Kaduna, (2013)

3.4 Sample and Sampling Techniques

Going by Krejcie and Morgan (1970) table for determining sample size, 341 respondents were used as sample for the study. The population targeted is 3514 this is in line with Krejcie and Morgan, who stated that when the target population is 3,500 the sample size would be 340.

The total sample size for this study was male and female students randomly selected from twelve zones in Kaduna State. Multi–sampling stages method was used in this study. The sample size undertaken was multi-stage sampling technique. First 4 educational zones were purposively picked from the twelve educational zones. The second stage was also randomly selected, 3 schools from each of the 4 selected educational zones. The total populations of the 12 schools from the 4 educational zones formed the target population for this study. This sample size is proportionally distributed across each of the 12 schools as shown in Table 3.2 below

Table: 3.2 Sample Size

Location	Sampled schools	SSS Male	SSS Female	Total Pop.	Sample Size	Sample Size (%)
Anchau	1. GSS, ANCHAU TAKALAFIYA (urban)	160	150	310	30	9
	2. GSS ANCHAU GARI(urban)	146	148	294	29	8
	3. GSS DUTSEN WAI(rural)	115	177	292	28	8
Zaria	1. GSS LIKORO(rural)	160	127	287	28	8
	2.GSSZARIA(urban)	172	136	307	30	9
	3.GSSTUNDU JUKUN(urban)	159	123	282	27	8
Giwa	1. GSSBASAWA(rural)	140	100	240	23	7
	2. GSSBOMO(urban)	185	130	315	31	9
	3. GSS HUNKUYI(rural)	190	112	302	29	9
Kaduna	1. GSS HAYIN BANKI(urban)	172	123	295	29	8
	2.GSSTUDUN NUPAWA MALALI(urban)	198	107	305	30	9
	3. GSS NARAYI(urban)	157	128	285	28	8
	Total	1,954	1,560	3,514	341	100%

3.5 Instrumentation

The instrument used to generate data from the respondents while measuring relationship between awareness of nutrition and practice of nutrition, the Nutritional Knowledge Among students by Elhassan and Somiya Mohammed (2013) was used and was adapted and modify by the researcher, to be line in with the research work, titled 'Students Nutritional Awareness and Practice Questionnaire,' which was made up of questions arranged systematically to focused on nutritional awareness and practice among students, the questionnaire was made up of three sections. Section 1 was aimed at eliciting personal information about the respondents. Each question was followed by requiring the respondents to tick the applicable, while section 11 was nutritional awareness of nutrition and section three practices of nutrition; section 11 and 111 was

designed according to likert type of rating. Respondents were requested to tick the applicable options, in all, the questionnaire was made up of 30 items.

3.5.1 Scoring Procedure

Students' nutritional awareness and practice questionnaire' was a structured questionnaire used in this study, it was primarily meant to collect data from the respondent (students). The 4Likert scale indicating strongly agreed (SA- 4), agreed (A-3), disagree (D-2) and strongly disagreed (SD-1) was adopted in this study. The respondents were to tick applicable answers and the scoring of the instrument is over 120, 30-60 low awareness greater than 60-80 is average and greater than 80-120 has high awareness of nutrition and the intakes of nutrients.

3.5.2 Validity of Research Instruments

To determine the validity of the instrument designed by the researcher, the questionnaire was subjected to scrutiny by the supervisors and seven (7) professionals in the field of study. These professionals include: Home Economics, a Nutritional Counsellor in Teaching Hospital A B U, Zaria, a lecturer from Institute of Education A B U, Zaria, lecturers from Educational Psychology and Counselling in faculty of education. Ahmadu Bello University, Zaria.

This was to ascertain the face and content validity of the instrument. Example, awareness of problems related to low intake of fruits and vegetables, corrections were made based on the advice of experts.

3.5.3 Pilot Study

A pilot study was carried out in G. S. S. Shika in Giwa Local Government, Giwa. Kaduna State. A total fourty (40) questionnaires consisting of Awareness of nutrition level and practices of nutrition level were distributed to fourty students. Through Split-

half Alpha Coefficient Statistical tool was used to determine the reliability of the instruments.

3.5.4 Reliability of the Instrument

Reliability is the stability or consistency of scores over time. Through split-half administration, data collected was subjected to the Cronbach alpha coefficient method. Cronbach Reliability Coefficient of 0.814 was obtained in Awareness of Nutrition level and Reliability Coefficient of 0.805 was obtained in Practices of Nutrition.

3.6 Procedure for Data Collection

The researcher personally collected a letter of introduction from the Department of Educational Psychology and Counselling to the various zonal Education and from the zonal Education a letter of permit was served to the researcher to various Principals of each selected schools in Kaduna State on different days to administer the instruments with the help of class teachers, the students were given the questionnaires to answer. The questionnaires were later collected from the respondents, and the completed instruments were computed and subjected to further statistical analysis, which is presented in chapter four.

3.7 Procedure for Data Analysis

The demographic variables were analyzed using descriptive statistics of frequency and percentages such as gender, location level and age of the respondents. The research questions were answered using frequency counts, means and standard deviations. The data collected was computed using Pearson Moment of Correlation statistical tools on Null hypotheses (Ho) 1 to 3 while null- hypotheses four was tested using analysis of variance (ANOVA). All hypotheses were tested at 0.05 alpha level of significance.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This section comprises the bio-data analysis, research question analysis, hypotheses testing, summary of major findings and discussion on findings.

4.2 Demographic Characteristics of the Respondents

Three hundred and forty (340)respondents of senior secondary school students selected from four educational inspectorate divisions in Kaduna State were used for the study and the demographics characteristics of the respondents are tabulated in frequencies and percentages respectively in table 4.01 below.

Table 4.01:Distribution of Respondents According to Gender

Gender	Frequency	Percent (%)
Male	190	63.8
Female	150	36.2
Total	**340**	**100.0**

The gender status of the respondents as shown in the table above reveals that 190 representing 63.8% are males and 150 representing 36.2% are female. This shows that both male and female are well represented in this study.

Table 4.02:Distribution of Respondents According to Location

Location	Frequency	Percent **(%)**
Rural	200	58.8
Urban	140	41.2
Total	340	100**.0**

According to the table above, 200 of the respondents representing 58.8% are from rural locations and 140 representing 41.2% are from urban locations.

Table 4.03: Distribution of Respondents According to Age

Age	Frequency	Percent
12-14	16	4.7
14-16	120	35.3
16-18	204	60.0
Total	340	100.0

Table 4.3 above indicates age group respondents, 16 representing 4.7% are 12-14 years, 120 representing 35.3% are 14-16 years and 204 representing 60.0 are 16-18 years.

4.2 Research Questions

Research Question 1: What is the relationship between nutritional awareness and practice among secondary school students in Kaduna state?

Table 4.04: Mean Score of Relationship between Awareness of Nutrition and Practice of Nutrition among Secondary School Student in Kaduna State

Variables	**N**	**Mean**	**S.D**
Nutritional Awareness	340	48.8706	5.66787
Nutrition Practices	340	34.4059	5.20834

From the table above, the result reveal that nutritional awareness has the mean score of 48.8706 while nutrition practices have the mean score of 34.4059. Therefore, it can be concluded that there is a difference in the mean score of nutritional awareness and practice among secondary school students in Kaduna State.

Research Question 2: What is the relationship between the awareness of nutrition and practice of nutrition of male eating habits students in Kaduna State?

Table 4.05: Mean score of Relationship between the Awareness Nutrition and Practice of Nutrition of Male Students Eating Habits

Variables	**N**	**Mean**	**S.D**
Nutritional Awareness of Male Students	340	48.8333	5.79414
Nutritional Practice of Male Students	340	34.3426	5.23661

From the table 4.05 above, the result reveal that the mean score of male students is 48.8333 in their nutritional awareness. While the mean score of practice of nutrition is 34.3426 Therefore, this implies that the gender status does not significantly affect the level of nutritional awareness among male students in Kaduna State.

Research Question 3: What is the relationship between the nutritional practices of female eating habits students in Kaduna State?

Table 4.06: Mean Score of Relationship between the Awareness of Nutritional and Practices of Nutrition of Female Students Eating Habits

Variables	N	Mean	S.D
Nutrition Awareness of Female	340	48..86299	5.4366
Nutrition Practices of Female	340	34.5122	5.18568

From the table 4.06 above, the result reveal that awareness of nutrition practices of female students has the mean score of 48.86299 while practice of nutrition of female students have the mean score of 34.5122. This implies that the gender status of the students does not significantly affect the level of nutritional practices among female students in Kaduna State.

Research Question 4: What is the relationship between awareness of nutrition and practice of nutrition among rural students of secondary school in Kaduna State?

Table 4.07: Mean Score of Relationship between Awareness of Nutrition and Practice of Nutrition among Rural Students

VARIABLES	N	MEAN	S.D
Nutrition Awareness of Rural	150	48.2362	5.75769
Nutrition Practice of Rural	150	34.2915	5.26236

From the table 4.07 the result reveals that awareness of nutrition and practice of nutrition among rural students has the mean score of 48.2362 and 34.2915. Therefore, it can be concluded that there is a difference in the mean score of awareness of nutrition and practice of nutrition among rural students of secondary school in Kaduna state.

Research Question 5: What is the relationship between the awareness of nutrition and practices of nutrition among urban students' secondary school in Kaduna State?

Table 4.08: Mean Score of Relationship between Awareness of Nutrition and Practice of Nutrition among Urban Students

VARIABLES	N	MEAN	S.D
Awareness of Nutrition of Urban	170	49.7143	5.41818
Practice of Nutrition of Urban	170	34.5643	5.16381

From the table 4.08 above the result reveal that awareness of nutrition and practices of nutrition of urban students have the mean score of 49.7143 and 34.5643. Therefore, it can be concluded that there is no relationship in the mean score of awareness of nutrition and practices of nutrition among urban students, in Kaduna State.

Research Question 6: What is the relationship between nutritional awareness among different age groups of students of secondary school in Kaduna state?

Table 4.09: Mean Score of Relationship between Different Age Groups of Students on Awareness of Nutrition

Variable	N	Mean	Std. Deviation
12-14 years	16	47.2500	5.63915
14-16 years	120	47.7167	5.54308
16-18 years	204	48.6765	5.62482
Total	340	48.8706	5.66787

From table 4.09 above, the result reveals that nutritional awareness mean score is 47.2500, 47.7167 and 48.6765 by 12-13 years, 14-16 years and 16-18 years respectively. This implies that their mean nutrition awareness is the same subset

confirming that they are not different from one another on the basis of their age group. Therefore, it can be concluded that there is difference in the mean score of nutritional awareness among different age groups of students of secondary school in Kaduna state.

Research Question 7: What is the relationship between nutritional practices among different age groups of students of secondary school in Kaduna state?

Table 4.10: Mean Score of Relationship between Different Age Groups of Students on Practice of Nutrition

Age group	N	Mean	Std. Deviation
12-14	16	31.7500	4.21900
14-16	120	33.9833	5.58055
16-18	204	34.8627	4.98577
Total	340	34.4059	5.20834

From table 4.10 above, the result reveal the nutritional practices mean score 31.7500, 33.9833 and 34.8627 by 12-13 years, 14-16 years and 16-18 years respectively. Therefore, it can be concluded that there is no relationship in the mean score of nutritional practices among different age groups of students of secondary school in Kaduna state. This shows that the older the students age group, the higher their nutritional practices.

4.3 Hypotheses Testing

Hypothesis 1: There is no significant relationship between nutritional awareness and practice among secondary school students in Kaduna State.

Table 4.11: Pearson Product Moment Correlation (PPMC) between Nutritional Awareness and Practice among Students

Variables	N	Mean	S.D	R	Df	Sig (p)
Nutritional Awareness	340	48.8706	5.66787			
Nutrition Practices	340	34.4059	5.20834	.594**	338	0.001

**** Correlation is significant at the 0.01 level (2-tailed)**

Table 4.11 above shows that significant relationship exists between nutritional awareness and practice among students. This is because the (p) value of 0.001 is lower than the 0.05 alpha level of significance at a correlation index r level of 0.594 at df of 338. This shows that students' nutritional awareness level and their nutritional practices are significantly related. Therefore, the null hypothesis which states that there is no significant relationship between nutritional awareness and practice among secondary school students in Kaduna state, are hereby rejected.

Hypothesis 2: The null hypothesis state that there is no significant relationship between the awareness of nutrition and practice of nutrition among male students of secondary school in Kaduna state

Table 4.12: Pearson Product Moment Correlation Statistics (PPMC) on the Relationship between the Nutritional Awareness and Nutritional Practices of Male Students

VARIABLES	N	MEAN	S.D	CORRELATION INDEX R	Df	SIG (P)
Nutritional Awareness of Male Students	340	48.8333	5.79414	0. .758**	214	0.002
Nutritional Practices of Male Students	340	34.3426	5.24411			

**. Correlation is significant at the 0.05 level (2-tailed).

Outcome of the PPMC statistics on table 4.12 above shows that significant relationship exists between the awareness of nutrition and practices of nutrition among male students, this is because the calculated p value of 0.002 was found to be lower than the 0.05 alpha level of significance, at a correlation index r level of 0.758. This implies that male students' nutritional level and their practice of nutrition are significantly related. The relationship is therefore directly proportional; Hence the null hypothesis which states that there is no significant relationship between the nutritional awareness and the nutritional practices of male students, is hereby rejected

Hypothesis 3: The null hypothesis state that there is no significant relationship between the awareness of nutrition and practices of nutrition of Female students in Kaduna state.

Table 4.13: Pearson Product Moment Correlation Statistics (PPMC) on the Relationship between the Nutritional Awareness and Nutritional Practices of Female Students

VARIABLES	N	MEAN	S.D	CORRELATION INDEX R	Df	SIG (P)
Nutritional Awareness of Female students	340	48.8699	5.43661	0.860**	121	0.002
Nutritional Practices of Female students	340	34.5122	5.18568			

**. Correlation is significant at the 0.05 level (2-tailed).

Outcome of the PPMC statistics on table 13 above shows that there is significant relationship between the awareness of nutrition and practices of nutrition of female students, this is because the calculated p value of 0.002 was found to be lower than the 0.05 alpha level of significance, at a correlation index r level of 0.860. The relationship is therefore directly proportional. Hence the null hypothesis which states that there is no significant relationship between the nutritional awareness and the nutritional practices of female students is hereby rejected.

Hypothesis 4: The null hypothesis states that there is no significant relationship between the awareness of nutrition and practices of nutrition of rural students of secondary school in Kaduna state.

Table 4.14: Pearson Product Moment Correlation Statistics (PPMC) on the Relationship between Awareness of Nutrition and Practices of Nutrition of Rural Students

VARIABLES	N	MEAN	S.D	CORRELATION INDEX R	Df	SIG (P)
Awareness of Nutrition Rural	150	48.2362	5.75769	0.600**	195	0.001
Practice of Nutrition Rural	150	34.2915	5.26236			

Outcome of the PPMC statistics above shows that significant relationship exist between the awareness of nutrition and practices of nutrition of rural students. This is because the calculated p value of 0.001 was found to be LOWER than the 0.05 alpha level of significance at a correlation index 0.600. This implies that among the rural students, significant relationship exist between their awareness of nutrition and practice of nutrition. Hence the null hypothesis which states that there is no significant relationship between nutritional awareness and practices of nutrition among rural students is hereby rejected.

Hypothesis 5: The null hypothesis states that there is no significant relationship between the awareness of nutrition and practices of nutrition among urban students of secondary school in Kaduna state.

Table 4.15: Pearson Product Moment Correlation Statistics (PPMC) on the Relationship between the Awareness of Nutrition and Practices of Nutrition among Urban Students

VARIABLES	N	MEAN	S.D	CORRELATION INDEX R	Df	SIG (P)
Awareness of Nutrition Urban	170	49.714	5.418	0.680**	136	0.18
Practice of Nutrition Urban	170	34.564	5.164			

Outcome of the PPMC statistics above shows that there is no significant relationship between awareness of nutrition and practice of nutrition among urban students. This is because the calculated p value of 0.18 was found to be higher than the 0.05 alpha level of significance at a correlation index 0.680. This implies that among the urban students, significant relationship exists between their nutritional awareness and nutritional practices. Hence the null hypothesis which states that there is no significant relationship between nutritional awareness and nutritional practices of urban students, is hereby retained.

Hypothesis 6: There is no significant relationship between awareness of nutrition among different age groups of students of secondary school in Kaduna State

Table 4.16: Analysis of Variance (ANOVA) Statistics on the Relationship between Nutritional Awareness among Different Age Groups of Students of Secondary School in Kaduna State

Descriptive

nutritional awareness

	N	Mean	Std. Deviation	Std. Error
12-14	16	47.2500	5.63915	1.40979
14-16	120	47.7167	5.54308	.50601
16-18	204	48.6765	5.62482	.39382
				.30738
Total	340	48.8706	5.66787	

Awareness of Nutrition ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	334.292	2	167.146	1.336	.205
Within Groups	10556.014	337	31.323		
Total	10890.306	339			

The results of the tables 16a above shows that. There is no significant relationship between nutritional awareness among different age groups of students of secondary school in Kaduna state, Reason being that the calculated Analysis of Variance (ANOVA) statistics p value of 0.205 is higher than the 0.05 alpha level of significance while the calculated f value of 1.336 is lower than the F critical value of 2.60. The descriptive statistics table shows that 47.2500, 47.7167 and 48.6765 by years 12-13 old, 14-16 years and 16-18 years respectively.

The post hoc analysis of the homogenous sub set also confirmed that their mean nutrition awareness are in the same subset confirming that they are not significantly different from one another on the basis of their age group. Consequently, the null hypothesis which state that: there is no significant relationship between nutritional awareness among different age groups of students of secondary school in Kaduna state, is hereby retained.

Hypothesis 7: There is no significant relationship between nutritional Practices among different age groups of students of secondary school in Kaduna state.

Table 4.17: Analysis of Variance (ANOVA) Statistics on the Relationship between Nutritional Practices among Different Age Groups of Students of Secondary School

Nutritional Practices

Age group	N	Mean	Std. Deviation	Std. Error
12-13	16	31.7500b	4.21900	1.05475
14-16	120	33.9833a	5.58055	.50943
16-18	204	34.8627a	4.98577	.34907
Total	340	34.4059	5.20834	.28246

ANOVA

Nutritional Practices

	Sum of Squares	Df	Mean Square	F	F critical	Sig.
Between Groups	176.865	2	88.432	3.304	2.60	.038
Within Groups	9019.124	337	26.763			
Total	9195.988	339				

Post Hoc Tests
Homogeneous Subsets

Nutritional Practices
Scheffe

Age	N	Subset for alpha = 0.05	
		1	2
12-13	16	31.7500	
14-16	120	33.9833	33.9833
16-18	204		34.8627
Sig.		.160	.751

The results of the tables above 16b show that significant relationship exist between nutritional practices among different age groups of students of secondary school in Kaduna state, Reason being that the calculated Analysis of Variance (ANOVA) statistic value of 0. 038is lower than 0.05 alpha level of significance while the calculated F value of 3.304 is greater than the F critical value of 2.60. The descriptive statistics table 16b shows that their computed nutritional practices were 31.7500, 33.9833 and 34.8627 by years 12-13 old, 14-16 years and 16-18 years respectively. This shows that the older the students age group, the higher their nutritional practices. This outcome is confirmed from the results of the Post hoc analysis. The post hoc analysis shows that age groups 12-13 and 14-16 years are in the same level, as against ages 14-16 years and 16-18 years that are in the same levels.

Consequently, the null hypothesis which states that no significant relationship exists between nutritional practices among different age groups of students of secondary schools in Kaduna state is hereby rejected.

4.6 Summary of Major Findings

From the results of analysis presented from table 4.04 to 4.17(b) the following are the summary of the major findings:

1. There is a significant relationship between awareness of nutrition and practices of nutrition among students in Kaduna state. (r =0.594,p=0.001).This suggests that students' awareness of nutrition level and their practices of nutrition level are significantly related.

2. Significant relationship exists between male students in awareness of nutrition and practices of nutrition among secondary school students in Kaduna State. All the p value are lower than 0.05 alpha level of significance (r =0.758, p=0.002),

3. Significant relationship exists between female students in awareness of nutrition and practices of nutrition among secondary school in Kaduna State. The p value is lower than 0.05 alpha level of significance (r =0.091, p=0.00),

4. Relationship exists between rural students in their nutritional awareness and practices of nutrition among secondary schools students in Kaduna state. The p value is lower than 0.05 alpha level of significance (r =0.600, p =0.001),

5. There is no Significant relationship between urban students in their awareness of nutrition and practices of nutrition, the p value is higher than 0.05 alpha level of significance (r =0.680, p= 0.18).

6. Age group among secondary school students in Kaduna state has no significant relationship in nutritional awareness, the p value is higher than 0.05 alpha level of significance (f =1.336, p = 0.205).

7. Relationship exist in nutritional practices among different age groups of students, the p value is lower than 0.05 alpha level of significance (f=3.304, p = 0.038),

4.7 Discussions

The study aims to find out relationship between awareness of nutrition and practices of nutrition. All the research questions were answered using frequency counts mean score and standard deviation. While, hypothesis one, two and three were tested by Pearson Product Moment Correlation, the Analysis of variance statistics was used in testing null hypotheses four. All hypotheses are tested at 0.05 alpha level of significance

Hypothesis one aims at finding out relationship between awareness of nutrition and practice of nutrition among students of secondary school in Kaduna State. The hypothesis was rejected because the level of correlation index of 0.594. Implying that significant relationship exist between awareness of nutrition and practice of nutrition.

This finding is not surprising based on the health condition among students and it is in agreement with the findings of Azizi and Khosravi (2010) among students in Athietes in Iran reveal that students are only slightly aware of nutrition issues and that students' knowledge and attitude are average, how to increase the nutrition knowledge and attitude or practice of students. This shows that students' nutritional awareness level and their nutritional practices are significantly related. The null hypothesis was therefore rejected. This is also being agreement with (Gates &De Lucia, 2000) which states that no significant difference between knowledge and attitude of nutrition among students. Therefore, the more awareness of nutrition the more practices. The result of this hypothesis was consequently rejected.

Hypothesis two sought to find out the relationship between male and female awareness of nutrition and practice of nutrition on eating habits in Kaduna state. The null hypothesis was rejected, because the p value is lower than 0.05 alpha of significant in this research, (Sakamaki et al, 2005) also assert that the average knowledge of the male students was 57.76% and that of the female students was 53% indicates that the students have average nutrition knowledge. In another finding, it is reported that in nutrition habits that female students consume carbohydrate greater than male students. This finding is not in agreement with the previous, Rukas and Shinfuku (2005). discovers that almost all students had good nutrition both male and female and sixty percent of female that wished to be thinner had less than or equal to 3 eating occasions per day this in agreement with rescearch on good eating habits of students that talks on obesity. Ruamsup Chayanit (2000). Garciam, Hugbrects and Ruiz (2013), study is in agreement with the report that says relationship exist in nutrition awareness and practice between male and female students in Kaduna state, that there was a significant differences in the knowledge level between students of difference disciplines

(f=4.05,p=0.001) and that knowledge level of the male participants (55.76 out of100) was significantly higher than that of the female participants (53 out of 100), and the statistics shows significant difference in the nutrition attitude between the difference disciplines (f=3.68,p=0.003) Azizi (2010).This finding is not in agreement with this research, Essien Eno (2014) that female students performed or have good nutrition knowledge than the male counterparts. This was indicated by higher percentage of female 64.6% than male students who had excellent nutrition knowledge scores (8.3 vs.4.2%) from selected public school Sokoto.

Hypothesis three sought to investigate the relationship between awareness of nutrition and practice of nutrition based on rural and urban among students in Kaduna State. The null hypothesis 3(1) was rejected, statistics revealed that significant relationship exists between urban and rural students in their nutritional awareness. In line with the research, 71% of students performed poorly, due to poor nutrition knowledge among students in rural area QwaQwa, South Africa, as reported by Oldewage (2010). This shows that rural students were deficient in knowledge and understanding of the facts about energy and nutritive value of foods. This implies that urban students have more nutritional awareness than the rural students, the null hypothesis 3 (2) was retained because the p value is higher than 0.05alpha level of significant and that the students have the same level of nutritional practice. This finding is not in agreement with the previous finding that nutrition practice were similarly poor since the learner could not practice what they did not know, FAO (2005) in Italy. In the research, the view that urban has more nutrition awareness than rural is in agreement with Essien (2014), that significantly (p=0.05) more rural students (65.1%) than urban students (34.9%) reported taboos and beliefs that negatively affected food consumption. Due to lack of knowledge of nutrition it was reported that

abstinence from consumption of certain foods prevail in rural area, girls were prohibited from consuming animals' head, for this will make them dominate their husband and that female were not to consume eggs otherwise they would become thieves and more others.

Hypothesis four show that there is no significant relationship between nutritional awareness among different age groups of students of secondary schools in Kaduna State, the reason being that the calculated Analysis of Variance (ANOVA) statistics p value of 0.205 is higher than the 0.05 alpha level of significance while the calculated f value of 1.336 is lower than the F critical value of 2.60. The descriptive statistics table shows that 47.2500, 47.7167 and 48.6765 by years 12-14 old, 14-16 years and 16-18 years respectively. The post hoc of the homogenous sub set also confirms that the mean nutrition awareness is in the same subset confirming that they are not significantly different from one another on the basis of their age group. Consequently, the null hypothesis which state that, there is no significant relationship between nutritional awareness among different age groups students of secondary school in Kaduna State is hereby retained.

This result indicates that all the students are being taught the nutrition and hence their level of awareness would most certainly be the same. The results of the null-hypothesis table four (b) above shows that significant relationship exists between nutritional practices among different age groups of students of secondary school in Kaduna state, the reason being that the calculated Analysis of Variance (ANOVA) statistics p value of 0. 038, lower than the 0.05 alpha level of significance while the calculated F value of 3.304 is greater than the F critical value of 2.60. The descriptive statistics table shows that their computed nutritional practices were 31.7500, 33.9833 and 34.8627 by years 12-13 old, 14-16 years and 16-18 years respectively. This shows

that the older the students age group, the higher their nutritional practices. This outcome is confirmed from the results of the Post hoc analysis; the post hoc analysis reveals that age groups 12-13 and 14-16 years are in the same levels. Consequently, the null hypothesis which states that no significant relationship exists between nutritional practices among different age groups of secondary school students in Kaduna State is here by rejected. The explanation for this outcome could be from the fact that the higher the ages of the students, the more nutrition awareness they have and nutrition practices they are exposed to. Therefore, the ages 16-18 which made up the highest group among the respondents have the highest level of nutritional practices.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

The study aims at finding out the relationship between nutritional awareness and nutritional practices among secondary students in Kaduna State. This chapter presents a summary, implications of findings for counseling, conclusions and recommendations.

5.1 Summary

The study was structured in to five chapters in order to effectively carry out this research work**.** The data collected from field consist of a total of 340 samples used in this analysis. Frequency and percentages were used to present the responses on demographic variables. These are gender, location and age. The research question was answered using mean scores. Hypotheses one, two and three were tested using (PPMC) Pearson product moment correlation while hypothesis four is ANOVA and was tested using analysis of variance statistics and all hypothesis were tested at 0.05 alpha level of significance. It was found that significant relationship exists between nutritional awareness and nutritional practices among secondary school students in Kaduna State (r=0.594, p=0.001). Awareness of nutrition and Practice of nutrition among secondary school students in Kaduna State had no influence on their gender eating habits (r= 0.020, p=0.954 and r= 0.091, p= 0.774). The findings indicate that the level of awareness of nutrition and practice of nutrition differ between rural and urban student srespectively (r=0.600,p=0.001 and r=0.680, p= 0.18). It implies that urban students have more awareness than rural students. It was revealed also that awareness of nutrition among age groups students is almost the same (f=1.336, p=0.205). Age groups among secondary school students of Kaduna state had influence on practice of nutrition(f=3.304, p=0.038) at 0.05 alpha level of significant.

5.2 Implications for Counselling

According to Jayda (2012), nutritional counselling is a type of assessment made which analyse various health needs as regards to diet and exercise. Nutrition counsellor to help people to set achievable health goals and teaches various ways of maintaining these goals throughout their lifetime. Counsellors are to treat client who struggle with eating disorder, dysfunctional eating and chronic dieting.

In the study, it was found that there is relationship between nutrition awareness and practice, that is, the more nutrition awareness the more nutritional practice and healthier. The implication of this is that counsellors should design a programme that will create more awareness on nutrition and practice; this can be done by organizing health talks, seminars using health personnel to improve healthy living among students. Counsellors within the school environment should help the teachers with reinforcement strategy by which an individual student is discouraged of bad eating habits that is eating junks food, too much sugary food that can cause so many diseases now and later in life and help to advise the school authority to allow only food reach in nutrients to be sold in the school canteens. More so, the counsellors should develop techniques of helping the obese adolescents from overeating, by using appraisal to promote eating less and eating fruits and vegetables that could reduce the fats and also help the thin ones to eat quality food to boost their body index mass and this should apply to all ages and gender students because female can be obese and male can also. Obesity can catch up with all ages, children are now said to have type 1 diabetes so they need proper guidance of what to feed on. One of the counselling principle states that counselling is for all that is everybody need counselling despite the age, gender and location, the implication of this finding is that counsellors could advise the government to make provision for nutritional counselling in the counselling centres both in urban and rural

schools in order to facilitate counselling services. Once this is established counsellor can create awareness of the importance of eating good food.

Nutrition counsellors sometimes should have offered counselling services at eating disorder treatment clinics for patients in need of anorexia treatment or eating assistance. It is the duty of a counsellor to educate the parents and students on the nature and negative effect of lack of awareness of nutrition and practice of nutrition on adolescents. Nutrition counselling is beneficial to a wide variety of people and can help those with numerous disorders. During this treatment, the counsellor provides knowledge based on a person's current status, helping to improve overall health.

Many nutrition counsellors recommend fitness programs and nutritional supplements by looking and testing out various products. Through nutrition counselling, basic health needs are met and special information is given to fit each person's everyday lifestyle.

Many people benefit from nutritional counselling. This type of counselling assists all ages, ranging from pregnant women to vegetarians, to elderly and people with different medical complications. The beneficiaries include those with:

1. Diabetes
2. Osteopovosis
3. Poor nutrition and eating patterns
4. Eating disorders treatment
5. Digestive complication
6. Cancer patient
7. Hypertension patient
8. Nutritional question
9. Allergies

10. Organ problems

11. Menopause

12. Fitness goal

13. Heart disease etc.

Children, youths, adults, chronically ill, everybody needs counselling.

Some counsellors feel that eating healthy food like fruits and vegetables, cooking meals at home and reducing your fat and sugar intake can help improve good health mentally physiologically and emotionally. Finally, there is need for professional Guidance and Counsellors in the schools, this is because some of the counselling techniques tested and proved to be effective and is only counsellors that can apply them correctly because of their training.

5.3 Conclusion

Based on the findings of this study, the following conclusions are arrived at:

Students nutritional awareness level and their nutritional practices is significantly related, the more awareness the more practices. Nutritional awareness and nutritional practices among male and female students are almost the same. Relationship exists between urban and rural students in their nutritional awareness while there is no significant relationship between urban and rural students in nutritional practice. With regards to awareness, the urban students are much exposed to modern technology which keeps them informed, while in practice, rural students eat all foods as well as urban students without being aware of the nutritional content. Though nutritional awareness has no age limits, they may equally be informed but the older students may want to keep fit and shape and watch what they eat.

5.4 Contributions to knowledge

The first null- hypothesis shows that the more awareness of nutrition, the more practice of nutrition and that a well nutritional practice brings about good healthy lifestyle. The researcher discovered that in the null- hypothesis one, some diseases that would have claimed lives were averted through the help of eating good food or having good eating habits, especially vegetables, fruits and soya milk can help to reduce cancer problems. These come as a result of having more awareness of nutrition.

The second finding reveals that Some students that would have become stunted in growth but having awareness of nutrition and practice of nutrition also helped to boost their development by giving awareness of nutrition and how to practice the intake of those nutrients. It is one thing to be aware, it is another thing to practice the intake of those nutrients properly, like the boys who like rushing food which is not too good for health and some students too, who like to eat and drink water at the same time easily have gastrointestinal problems. Thus flatulence comes as a result of bad eating habits. It was also discovered that eating late and going to bed immediately can result to obesity and this is for both girls and boys. The obesity and diabetic is non selective among male and female. Awareness can assist parents and counsellor to help these children.

The third findings of the null-hypothesis states that there is no relationship between awareness of nutrition and practice of nutrition in rural and urban location. This has made the researchers to know or have knowledge that the government should begin to have the rural students in mind especially of developing the place with access to media through which useful nutritional information could be passed to these rural students. Also, the government, counsellors and NGOs should make it a duty of giving

proper nutritional education to rural students in order to enhance eating the right thing at the right time.

The fourth nutritional hypothesis is also giving us a clue that the older someone goes the more one practices proper nutrition that is dietary. Even when one knows the nutrient content of food, yet he or she has to eat just a little at a time not like younger ones who eat randomly. The older students eat good food and less quantity in other not to get obese, and to keep fit and look healthier.

5.5 Recommendations

The following recommendations are made based on the findings and conclusion of the study:

1. There should be general nutrition awareness by the counsellors to enhance practice of nutrition among students and their parents. Students should pay much attention to nutrition during learning and promote nutrition.
2. Counsellors in all institutions should make it clear that there should be no gender discrimination in giving nutritional counselling to students, so as to enhance their academic performance and cognitive functioning.
3. Counsellors should assist the obsessed male and female student to shade off some weight by using some techniques such as appraisal and reinforcement.
4. The urban students were reported to have had higher nutrition awareness than their rural counterparts. Therefore, efforts should be made by the government and the NGOs to carry the rural students along in the awareness of nutrition. Proper information from the counsellors should be well disseminated, like using notice board, sign-post and others.

5. Although rural students eat most ever thing the counsellor should take it upon themselves to teach them the important of taking the right nutrition in other to avoid diseases
6. As regards to age, curriculum planners should include nutrition as a subject into the curriculum to be taught in all classes in our secondary schools not just balanced diet but total nutrition awareness and practice of nutrition, as this will increase the healthy lifestyle among students of different age groups.
7. The younger ones who tend to eat everything should be guided on what to feed on so as to avoid future healthy lifestyle**.**

5.6 Suggestions for Further Studies

This study's main objective was to examine the relationship between nutritional awareness and practice among secondary school students in Kaduna State. This study is by no means exhaustive as further studies could be carried out in other related fields. The following suggestions are therefore put forward for further academic work:

1. Effect of home background, on the nutritional characteristics of senior secondary school students in Zaria metropolis.

2. Secondly, researchers can find out the quantity of elements content in food to be taking per meal.

3. This study was delimited to public schools; another study could be conducted using private schools.

4. Study could be done using Experimental study and survey since Correlation was adopted in this study.

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APPENDIX I

STUDENTS QUSTIONNAIRE ON NUTRITIONAL AWARENESS AND PRACTICE

Dear Respondents,

The questionnaire is designed to find out the nutritional awareness and practices among secondary school students in Kaduna State; implication for counselling. Every information you provide will be use strictly for the purpose of this research and treated with utmost confidentiality .Thank you foryour cooperation.

Section A: Personal Data

Kindly tick [√] the correct option below

1. Name of the school…….....

2. Gender: (a) Male [ ] (b) Female [ ].

3. Location: (a) Rural [ ] (b) Urban [ ].

4. Age: (a) 12-13 [ ] (b) 14-16 [ ] (c) 16-18 [ ].

Section B: Kindly tick [√]the statement that represents your opinion about the questions asked.

KEY:

SA- Strongly Agree

A— Agree.

D — Disagree

SD — Strongly Disagree.

S/No	Items	SA	A	D	SD
	Awareness of Nutrition				
1	I am aware of the food with much fiber.				
2	Nutrient is an important substance needed by the body for growth.				
3	Good nutrition is eating variety of food in the right proportion.				
4	I am aware that water prevents indigestion.				
5	Frequent consumption of food high in fat, salt, sugar promotes healthy living in future.				
6	I know that minerals and vitamins are protective foods.				
7	Low consumption of healthy nutritious food can lead to excessive weight gain.				
8	Energy giving foods help in performing activities requiring weight.				
9	Protective food are useful for body growth.				
10	protein builds up the body and replaces worn out tissues.				
11	I am aware of which foods have more calcium.				
12	Giving equal nutritional awareness to both male and female students.				
13	Awareness of hazards related to soft drinks.				
14	Teenagers do not eat the maximum amount of whole grain each day.				
15	Eating snacks between meal can help reduce weight.				
16	Awareness of problems related to low intake of fruits and vegetables.				
17	Awareness of the best choice to reduce the amount of fat in diet.				
18	Both students like eating fresh food than frozen or processed food.				

Practices of Nutrition.		SA	A	D	SD
19	I read food labels and storage methods before buying and eating.				
20	Selecting food items that are convenient to eat.				
21	I eat heavy meals two times a day instead of taking three meals.				
22	When I am given enough money, I eat everything that is available.				
23	I eat a lot of fruits before meal in the morning in order to have appetite.				
24	My parents do not like taking fruits and I behave same by avoiding fruits.				
25	I eat between meals in addition to snacks.				
26	I do take snacks even if I have taken enough food.				
27	Male students eat more of heavy food due to their body mass index.				
28	Place unhealthy food and snacks in the homes and schools.				
29	Female students eat more of carbohydrate foods due to sugar contents.				
30	Both students who have access to media eat more of junks and fast food.				
	due to much advert.				

Analysis of Bio data Variables using Frequencies and Percentage Distribution

Table 4.1: Distribution of Respondents According to their School

School	Frequency	Percentage
GSS, ANCHAU TAKALAFIYA	30	8.8
GSS,ANCHAU GARI	29	8.5
GSS,DUTSEN WAI	28	8.2
GSSLUKORO	28	8.2
GSSZARIA	30	8.8
GSSTUNDU JUKUN	26	7.6
GSSBASAWA	23	6.8
GSSBOMO	30	8.8
GSS HUNKUYI	29	8.5
GSS HAYIN BANKI	29	8.5
GSS TUDUN NUPAWA,MALALI	30	8.8
GGSS NARAYI	28	8.2
Total	**340**	**100**

The table above showS the distribution of the respondents according to their various schools. A total of 340 students from 12 secondary schools were used. It was observed that secondary schools consisting of GSS Anchanu, GSS ZZaria, GSS Bomo and GSS T/Nupawa malali each had 30 (8.8%) student sampled fro trghis study. It was also observed that schools such as GSS ANcjau gari, GSS Hunkuyi and GSS hayin Banki each had 29 or 8.5% students each. Schools such as GSS Dutsei Wai, GSS lukoro, and GGSS Narayi each had 28 or 8.2% students sample r4espondents. It was

observed that while GSS Tudun Jukun had 26 or 7.6% student respondents the rest 23 or 6.8% students are from GSS Baswa.

Perception of Respondents According to Nutritional Awareness Level

S/No	Items	Response Categories				Mean	Std. Dev
		SA	A	D	SD		
1	I am aware of the food with much fiber.	163	138	22	17	3.31	0.80
2	nutrient is an important substance needed by the body for growth.	170	130	24	16	3.34	0.81
3	good nutrition is eating variety of food in the right proportion.	144	128	37	31	3.13	0.94
4	I am aware that water prevents indigestion.	130	102	60	48	2.92	1.06
5	frequent consumption of food high in fat, salt, sugar promotes healthy living in future.	87	125	83	45	2.75	0.98
6	I know that minerals and vitamins are protective foods.	137	151	35	17	3.20	0.82
7	low consumption of healthy nutritious food can lead to excessive weight gain.	103	104	91	42	2.79	1.01
8	energy giving foods help in performingactivities requirinweight.	148	134	34	24	3.19	0.88

9	protective food are useful for body growth.	202	109	8	21	3.45	0.82
10	protein builds up the body and replaces worn out tissues.	139	131	41	29	3.12	0.93
11	I am aware of which foods have more calcium.	110	122	74	34	2.91	0.97
12	giving equal nutritional awareness to both male and female students.	93	152	59	36	2.89	0.93
13	awareness of hazards related to soft drinks.	83	125	83	49	2.71	0.99
14	teenagers do not eat the maximum amount of whole grain each day.	95	128	72	45	2.80	0.99
15	eating snacks between meal can help reduce weight.	105	112	86	37	2.84	0.99
16	awareness of problems related to low intake of fruits and vegetables.	119	147	43	31	3.04	0.92
17	awareness of the best choice to reduce the amount of fat in diet.	134	98	49	59	2.90	1.11
18	both students like eating fresh food than frozen or processed food.	148	102	49	41	3.05	1.03
	Cumulative mean					**3.018**	

Decision mean = 2.5000

The cumulative mean response of all the item in tale 4.2.1 above prove that the respondents awareness of nutrition level is above average, since the cumulative mean of 3.018 is higher than the decision mean of 2.5000 The above table reveals the level

of nutritional awareness of the respondents. the highest mean response of 3.45 came from the item that protective food are useful for body growth with 202 of the respondents strongly agreeing to this, 109 of them agreeing, 8 disagreeing and 21 of them strongly disagreeing. The opinion that nutrient is an important substance necessary for growth had the second highest mean of 3.34 with 170 respondents strongly agreeing, 130 of them agreeing, 24 of them disagreeing and the rest 16 of them strongly disagreeing to this. The least level of nutritional awareness came from the item of the awareness of hazards related to soft drinks with a mean of 2.71, 83 of the respondents strongly agreed, 125 of them agreed, 83 of them disagreed and the rest 49 of them strongly disagreed.

It can be concluded therefore that the respondents awareness level towards nutrition is above average, specifically majority of them believed that protective food are useful for body growth and in addition most of them believed that nutrient is an important substance necessary for growth. The least level of nutritional awareness came from the item of the awareness of hazards related to soft drinks

Perception of Respondents According to Nutritional Practice Level

S/No	Items	Response categories				Mean	Std. Dev
		SA	A	D	SD		
1	I read food labels and storage methods before buying and eating	146	135	30	29	3.17	0.91
2	selecting food items that are convenient to eat	132	136	49	23	3.11	0.89
3	I eat heavy meals two times a day instead to taking three meals	99	93	94	54	2.70	1.06
4	when I am given enough money, I eat	95	107	84	54	2.71	1.04

	everything that is available						
5	I eat a lot of fruits before meal in the morning in order to have appetite	98	107	79	56	2.73	1.05
6	my parents do not like taking fruits and I behave same by avoiding fruits	85	85	90	80	2.51	1.11
7	I eat between meals in addition to snacks	119	101	77	43	2.87	1.03
8	I do take snacks even if I have taken enough food	88	137	64	51	2.77	0.99
9	male students eat more of heavy food due to their body mass index	104	118	72	46	2.82	1.02
10	place unhealthy food and snacks in the homes and schools	109	101	77	53	2.78	1.06
11	female students eat more of carbohydrate foods due to sugar contents	130	119	47	44	2.99	1.02
12	both students who have access to media eat more of junks and fast food due to much advert	113	133	75	19	3.00	0.88
	Cumulative mean					**2.841**	

Decision mean = 2.5000

APPENDIX II

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	217	63.8	63.8	63.8
	Female	123	36.2	36.2	99.7
	Total	340	100.0	100.0	

Location

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	200	58.8	58.8	58.8
	Urban	140	41.2	41.2	99.7
	Total	340	100.0	100.0	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12-13	16	4.7	4.7	4.7
	14-16	120	35.3	35.3	39.7
	16-18	204	60.0	60.0	99.7
	Total	340	100.0	100.0	

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
nutritional_awareness	48.8706	5.66787	340
nutritional_practices	34.4059	5.20834	340

Correlations

		Nutritional awareness	Nutritional practices
nutritional_awareness	Pearson Correlation	1	.492**
	Sig. (2-tailed)		.000
	N	340	340
Nutritional practices	Pearson Correlation	.492**	1
	Sig. (2-tailed)	.000	
	N	340	340

**. Correlation is significant at the 0.01 level (2-tailed).

One way

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
nutritional awareness	Between Groups	334.292	2	167.146	1.336	.205
	Within Groups	10556.014	337	31.323		
	Total	10890.306	339			
nutritional practices	Between Groups	176.865	2	88.432	3.304	.038
	Within Groups	9019.124	337	26.763		
	Total	9195.988	339			

nutritional_practices

Scheffe[a,b]

Age	N	Subset for alpha = 0.05	
		1	2
12-13	16	31.7500	
14-16	120	33.9833	33.9833
16-18	204		34.8627
Sig.		.160	.751

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 39.612.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

RURAL

Correlations

Descriptive Statistics

Variables	Mean	Std. Deviation	N
nutritional_awareness	48.2362	5.75769	150
nutritional_practices	34.2915	5.26236	150

CORRELATIONS

Variables		nutritional awareness	nutritional practices
nutritional awareness	Pearson Correlation	1	.602**
	Sig. (2-tailed)		.000
	N	150	150
nutritional practices	Pearson Correlation	.602**	1
	Sig. (2-tailed)	.000	
	N	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

URBAN

Correlations

Descriptive Statistics

Variables	Mean	Std. Deviation	N
nutritional awareness	49.7143	5.41818	170
nutritional practices	34.5643	5.16381	170

Correlations

Variables		nutritional awareness	nutritional practices
nutritional awareness	Pearson Correlation	1	.680**
	Sig. (2-tailed)		.000
	N	170	170
nutritional practices	Pearson Correlation	.680**	1
	Sig. (2-tailed)	.000	
	N	170	170

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability combined

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded[a]	0	.0
	Total	40	100.0

a. List wise deletion based on all variables in the procedure.

Correlation.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.777	.795	30

NUTRITIONAL AWARENESS LEVEL

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded[a]	0	.0
	Total	40	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.814	.848	18

NUTRITIONAL PRACTICE LEVEL

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded[a]	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.805	.840	12